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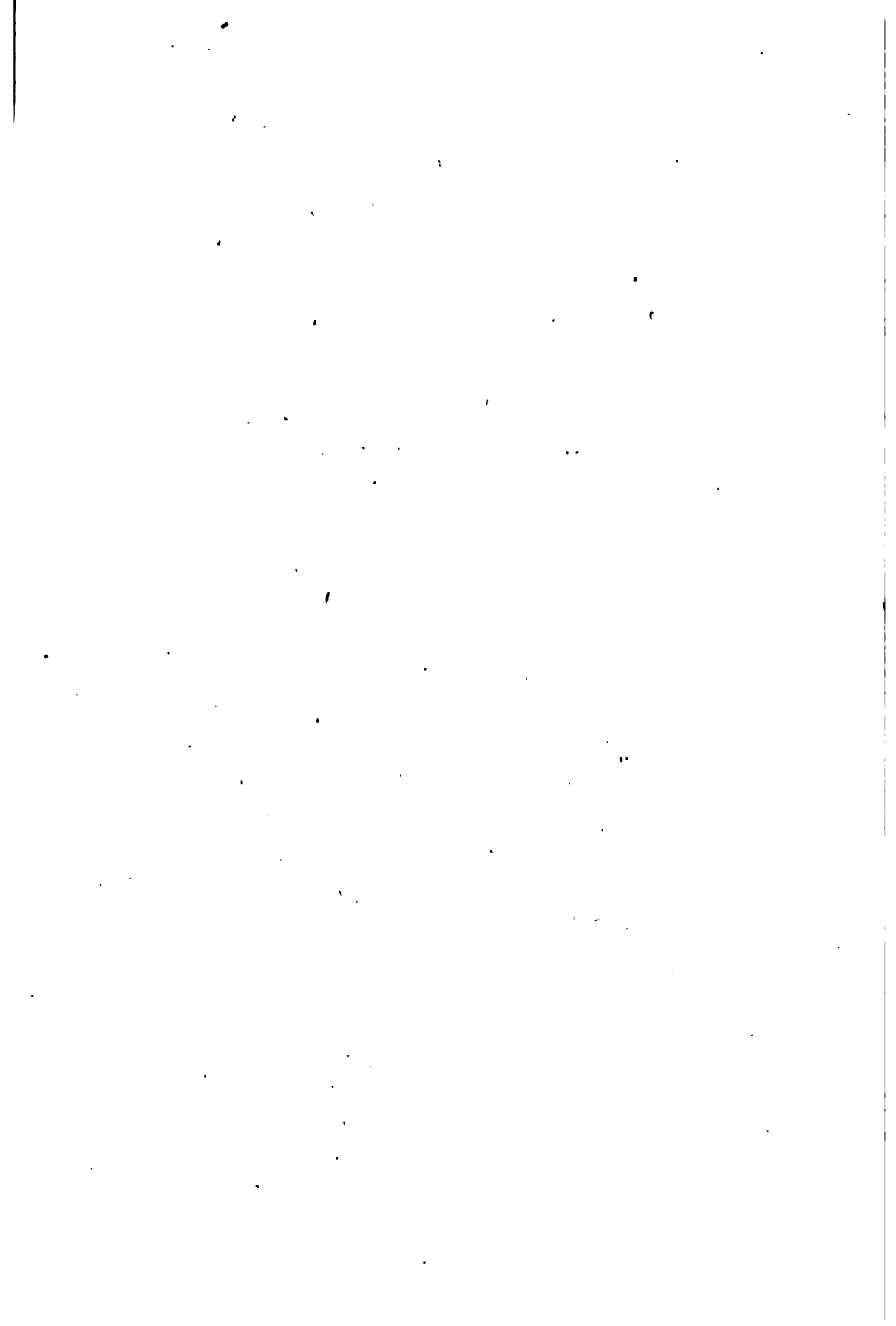
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OUR OPPORTUNITY

EDNA N. WHITE

President of the American Home Economics Association

In these days that have followed our wild celebration of the coming of peace we have begun to realize that the problems of reconstruction are, in many ways, more difficult to solve than those that arose during the conflict. The great educational movement in conservation developed throughout the country an understanding and appreciation of our work in home economics which offers us a great opportunity for service and we shall have need of all our training and resources to meet the new situation.

Conservation teaching was based on home economics principles, but just as they were developed and modified to meet the war crisis, so now they must be adapted and developed to meet the changed conditions of peace. The signing of the armistice inevitably brought a general relaxation of effort, with a tendency to slip back into the old ruts; yet if we are to take advantage of our opportunity and make our contribution to the reconstruction program we must realize fully that this is not the time to relax our efforts. It is rather the time to consider what has been accomplished and to discuss how our program can be adapted and extended to make it of the greatest value in helping to make a new world.

Our work, perhaps fortunately, is still in a formative stage, and it needs to be scrutinized to see whether or not the necessary fundamentals are taught, and taught to the best possible advantage. Home economics principles, too, need to be applied to many other things besides food. Its overwhelming importance in the war has made us forget

sometimes that there are many other considerations and that these must now receive attention.

Out of all the attention given to food, there has developed a different attitude that has been a great gain; a recognition that foods have definite bodily functions to perform, and that their selection is not a matter of purely individual taste. This changed attitude ought to help greatly in the teaching of the basic dietetic principles, but on the other hand we ought to be especially careful not to obscure fundamental facts by unnecessary detail and technical terms. It should be profitable to consider what facts are fundamental and how they may be clothed in simple terms.

We shall surely never again over-emphasize preparation in comparison with selection, but we shall realize that both must be taught even to beginners.

The work of the Food Administration has brought to our attention many trade practices, and our attitude toward commercial problems in general ought to be a more sympathetic and understanding one.

The substitution of various types of food has taught us many valuable lessons regarding utilization of food materials and what is meant by real food thrift in studying how to prevent waste. Let us hope that it can never be said again that a "French family could live on what an American family wastes." We have not been free from blame in teaching extravagance in food and we need the point of view presented by Jane Addams, "Those of us who have lived among immigrants realize that there is highly developed among them a certain reverence for food. Food is the precious stuff men live by, that which is obtained only after long and toilsome labor; it is the cherished thing which the poor have seen come into their homes, little by little and often not enough, since they were children, until to waste it has come to seem sinful and irreligious."

We have learned some lessons regarding fuel—not so well, perhaps, as in the case of food, but still the matter of waste and wise use has been called to our attention. Let us develop this still further until civic consciousness is awakened regarding the vicious practice prevalent in many communities of deliberate waste of fuel because it is a natural resource and can therefore be sold for a low price. The teaching of wise use and thrifty habits in the use of fuel should be as much a part of our work as food teaching. When the public understands these principles the commercial exploitation so common before the war will not be permitted.

Our teaching regarding textiles and clothing has probably been less affected because there has been less propaganda, and therefore less attention has been given to it. Our future teaching however can scarcely fail to reflect our new attitude. Shall we ever again be willing to devote the major part of the time to the construction of new garments, failing to emphasize the principles of wise buying, proper selection, remodeling, care, and repair? Questions of passing fashion in dress will inevitably receive less attention and the application of art principles both to dress and housefurnishing will be recognized as necessary and fundamental.

We have all probably felt that we taught the principles of buying and general expenditure fairly well, but I wonder if our teaching of savings and thrift will not receive a different emphasis because of the war saving program. The food expenditure studies which the government found necessary may make the average householder more patient with household accounts, since they were deemed so necessary in determining national policies.

There has been little opportunity to teach much regarding the saving of time and labor; that is one of the phases that must now receive attention. There has been considerable misplaced emphasis on efficiency in industrial fields, but time and labor in household processes have been little studied.

Out of the changed conditions which have developed in many households will come the necessity for learning new ways of conserving time and labor so that there may be opportunity to assume new duties and new obligations. Because of the great increase in the number of women in industry, there is need for learning standards and the limits set by law for the labor of women and children. This is one of the problems that is especially troublesome in reconstruction, and our students should gather information so that they may form intelligent opinions regarding it.

We have always taught some facts regarding sanitation and hygiene. The lessons of the war will enable us to drive them home with greater force. The fundamental necessity of teaching these facts about every day living ought to be more easily brought home to educators and made a part of every school curriculum. Again the necessity confronts us of making sure what the fundamentals are, and of expressing the facts in simple language. We must make an effort to extend this teaching beyond the classes of girls to whom it has been largely confined, and endeavor to reach all groups in the schools.

The facts collected by the Children's Bureau regarding child conservation ought to form the basis for definite work along this line. Miss Ravenhill has been pointing out to us for some time that child care and development are neglected phases of our work. Let us see to it that we make a beginning at least in developing work along this line in our reconstruction.

Last but not by any means least of all we must by this time have developed a new sense of civic responsibility. We must see to it that our students feel a definite sense of responsibility to the community in every line. A poor milk or water supply, a neglected orphanage, an inefficient board of health, bad industrial conditions—all are a part of their responsibility as citizens and teachers.

In waging this war we have imposed heavy obligations on the coming generation. If our children are to accept their part and help us save that for which we have fought, they must be trained.

The call for service is not less, but greater, than ever before.

The American housewife has served well; she now has a more difficult task before her—one which will continue throughout the coming year. Until we have banished the specter of famine from the world's table we must not relax our efforts to save food.—*United States Food Administration.*

A REVIEW OF SOME RECENT LITERATURE ON MALNUTRITION IN CHILDREN

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Malnutrition in children has become a topic of widespread interest during the past year. It has occupied a prominent place in the discussions at meetings of pediatricians;¹ articles concerning it have appeared in medical journals, social service journals, popular magazines,² and newspapers; and a variety of agencies have been set at work to combat it. It seems worth while to summarize from this mass of material what has been contributed to our knowledge of malnutrition in regard to the following points:

Prevalence of Malnutrition. In an address before the New York Academy of Medicine in December, 1917, Dr. Chapin³ quoted the results of two studies which showed the condition in New York City. In one, made in 1916, 95,030 children were examined and graded by the Dunfermline scale. The results showed: Grade I, 30 per cent; Grade II, 59 per cent; Grade III, 8 per cent; Grade IV, 3 per cent. In other words only 30 per cent of the children were in really good physical condition, while 11 per cent were in a state of undernutrition.

The second investigation was made by Frank Manny of New York. He examined all the children in two public schools—not the worst ones, by far—with the following result: Grade I, 21 per cent; Grade II, 42 per cent; Grade III, 24 per cent; Grade IV, 12 per cent. This, as will be noted, reveals a still more serious condition than the first study, only 21 per cent being in a good state of nutrition and 36 per cent badly undernourished.

One of the most recent investigations⁴ was made in March, 1918, by the Bureau of Child Hygiene of New York City. They made a survey of all the school children in the borough of Manhattan. 171,661 chil-

¹ Report of the Annual Meeting of the American Pediatric Society. *Arch. Ped.*, 25, 1918, p. 32.

² War Prices and the Undernourished Child. L. Oppen. *Good Housekeeping*, 67, 1918, p. 73.

³ National Danger of Defective Development of the Growing Child in Wartime. Chapin. (Discussion by others.) *Arch. Ped.*, 35, 1918, p. 54.

⁴ Malnutrition of School Children. Weekly Bulletin of Dept. of Health. City of New York, 6, 1918, p. 75.

dren were examined and the following results were found: Grade I, 29,781 or 17.3 per cent; Grade II, 104,908 or 61.1 per cent; Grade III, 37,718 or 18.5 per cent; Grade IV, 5,284 or 3.1 per cent. The Bureau believed that these figures could be safely assumed as applicable to the city as a whole. This being so, New York's 1,000,000 school children would be distributed as follows: Normal as regards nutrition, 173,000; passable, 611,000; seriously malnourished, 185,000; in very bad condition, 31,000.

With such conditions revealed—with over 200,000 malnourished children in their schools—is it any wonder that the New York pediatricians and child welfare agencies have become awake to the fact that it behooves them to do something about it?

These studies, as it happens, are all for New York City. To what extent they are applicable to the country at large, we can only surmise; but we can probably safely conclude that they furnish abundant proof that the estimate so frequently made that 10 per cent of the children in our country are suffering from malnutrition is far too low.

Methods of Determining Malnutrition. Scales for Grading. Height and Weight Standards. Any discussion of malnutrition naturally brings up the method of determining the state of nutrition, and includes both the scales for grading and height and weight standards. Some pediatricians make no attempt to classify grades of nutrition, being content to class all who fall a certain per cent below normal as malnourished. Emerson is of this number. He diagnoses any child as delicate, or malnourished, who falls 10 per cent below normal weight, for he says,⁵ "children do not become underweight to this degree except for adequate causes." In most cases, however, an attempt is made at further classification. The Dunfermline scale—originated by Dr. McKenzie of Dunfermline, Scotland—was adopted by the Bureau of Child Welfare of New York City a few years back and is the one now used pretty generally throughout the country. Manny⁶ describes the scale, its value, and the uniformity of grading secured even when used by different physicians. He considers the value of the scale lies in the fact that it makes grading easy, because in groups III and IV it names something definite to be done to the child, and in group I explicitly states that a child so graded is not merely excellent as compared with others of a group, but

⁵ Food Habits of Delicate Children. Emerson. *N. Y. Jour. Med.*, Feb. 24, 1917.

⁶ A Scale for Grading Nutrition. Manny. *School and Society*, 3, 1916, p. 125.

is one who would be considered excellent anywhere. In a test application of this scale it was found that physicians agreed as well, or better, on the state of nutrition than they did on even such common defects as bad teeth, tonsils, and adenoids. In order to make certain that all necessary factors are considered in the grading, Manny states the "aids to diagnosis" which are used in connection with the scale.

If used as suggested by Mr. Manny, it would seem that the scale might be a valuable means of classification. It has, however, received much unfavorable criticism. Holt⁷ in referring to the scale spoke thus: "The Dunfermline scale should be mentioned, though I can mention it only to condemn it. Dr. Baker of the New York Health Department has had 170,000 children examined by this scale and reaches results that are quite at variance with what is true." Dr. Baker⁸ reports this investigation made by Dr. Willis, Chief of the Division of School Medical Inspection, and herself, in order to determine if there were any basis of error in the grading. She found that physicians in certain localities had become so accustomed to malnutrition that they had come to regard it as a racial or local type, and had made, therefore, a relative grading only. Since they found no children belonging in group I, they had used the scale merely to show degrees of malnutrition. From this it would seem that the fault lies, not in the scale, but in the failure of the physicians to hold to the strict standard described by it, or else to their unfamiliarity with a physically superior child. Both these difficulties, it appears, might be overcome.

Height and Weight Standards. There are a number of tables of the height and weight of normal children in use at the present time. The principal ones are described on the Weighing and Measuring card of the Children's Bureau. The one used by the Bureau itself was compiled from several of these. Concerning the relative value of these scales the Public Health Committee⁹ of the New York Academy of Medicine says this: "The existing tables of the relation of height and weight to age are either obsolete, as is the Bowditch scale, or based on children of certain social groups such as Baldwin's study of pupils in private schools. The Boas scale is, for the time being, the most serviceable as it is a combination of several scales. It is based on a larger number of measure-

⁷ Standards for Growth and Nutrition of School Children. Holt. (Discussions.) *Arch. Ped.*, 35, 1918, p. 339.

⁸ Malnutrition Among School Children. Pub. Health. Com., New York Academy of Medicine, *Med. Rec.*, 93, p. 1211.

ments than any other scale and is more adapted to a cosmopolitan community like New York City, for it takes account of various racial stocks." Holt⁷ also speaks of the Bowditch scale as out of date because prepared twenty years ago, and the children of this generation, he says, are taller. Smith⁸ speaks of using the Bowditch scale, but rather because of the lack of a better one than because he believes it to be a really good guide. The consensus of opinion seems to be that there is need of a new scale better adapted to the present day American children than is any existing one.

In connection with the discussion of height and weight standards, there always arises the question as to how they shall be used,—whether to consider weight to age, height to age, weight to height, or all three of them. Holt⁷ regards the weight to height relation as the only really important one, though even here considerable variation exists even in healthy children. The normal curve, he very aptly says, is not a line but a zone and a wider zone than is usually thought. Height and weight growth are as a rule parallel in well fed children, but on insufficient food there is growth in height but not in weight. He regards a child as malnourished if 10 per cent below weight for height from six to ten years, and if 12 per cent below from eleven to sixteen years. The *annual rate of increase* however, he believes to be an even better guide. Emerson⁹ also considers weight as more affected than height. Smith⁸ believes that basing judgment on comparison of weight to height alone is misleading, there being no guide to the degree of malnutrition if a child is under height for age. He finds children in his clinics can be made to gain in height as well as weight.

Manny¹⁰ after a careful investigation of the three methods of determining defective nutrition concludes that any adequate system must make use of the advantages of both weight relationships. Too close devotion to the weight-height basis allows many children underweight for age to pass as normal. He believes there is need of experimental work to develop a system which will utilize the advantages of both weight bases.

Causes of Malnutrition. Not much that is new has been contributed recently concerning the specific causes of malnutrition. Emerson,

⁷ Methods of Conducting a Class for Undernourished Children. Chas. Hendee Smith. *Amer. Jour. Diseases Children*, 15, 1918, p. 373. Also *Arch. Ped.*, 35, 1918, p. 427.

¹⁰ A Comparison of Three Methods of Determining Defective Nutrition. Manny. *Arch. Ped.*, 35, 1918, p. 88.

Smith, Badger, the Public Health Committee, and others have discussed the subject and presented much interesting data. In the last analysis, however, all the causes given are included in Mrs. Bryant's¹¹ familiar classification. Recent study has, however, added considerably to our knowledge of what we may term the real or underlying causes of malnutrition. Various agencies have been trying to find the answer to the questions: Why are children insufficiently fed? Why do they have too little sleep? Why are bad teeth and other defects not attended to? The answer seems to be that while poverty is very often a real and very serious cause of malnutrition, yet ignorance and lack of parental control are even more frequently responsible. Children are insufficiently fed because parents are ignorant of what are proper foods, of the necessity of regular, unhurried meals, of the need of a good breakfast for a growing child, of the harmfulness of tea and coffee, and of the habit of eating candy and trash between meals. Greater than ignorance even in many cases is the lack of parental control. Even when they know better a large number of parents allow their children to eat when and what they like, and to choose their own time for going to bed. Ignorance fully as much as poverty, is likewise to blame for much of the unhygienic living, and the same can be said of the lack of attention given teeth and other physical defects. "Malnutrition," says Dr. Kantor,¹² "is not merely a poverty problem, a food problem, or a medical problem, but involves the adjustment between the individual and his environment in the broadest sense and needs all agencies."

AGENCIES FOR DEALING WITH MALNUTRITION

1. *Malnutrition Clinics.* Foremost among the agencies now at work on the problem of undernutrition in children is the malnutrition clinic. Dr. Emerson¹³ as long ago as 1910 was conducting such a clinic in Boston, and more recently five of them have been started in New York City. These clinics are conducted at Bellevue Hospital by Dr. Chas. Hendee Smith, at Postgraduate Hospital by Dr. Morris Stark, at Cornell University clinic by Dr. Wilson, and at the A. I. C. P. of Brooklyn and the Bowling Green Neighborhood Association by Dr. Kantor. Smith,⁹

¹¹ School Feeding. Bryant. Pp. 210-247.

¹² Experience With a Class in Malnutrition. Kantor. *N. Y. Med. Jour.*, 108, p. 241.

¹³ Class Method in Dietetic and Hygienic Treatment of Delicate Children. Emerson. *Pediatrics*, 22, 1910, p. 627.

Kantor,¹² Emerson,¹³ and Miss Uzzell¹⁴ have all contributed somewhat detailed reports of the methods of conducting these clinics and of the results obtained; and both Mr. Manny¹⁵ and the Public Health Committee of New York Academy of Medicine⁸ have summarized the type of work done and the results secured in a number of such clinics. Briefly, the conduct of a malnutrition clinic is as follows:

Groups of underweight children meet weekly, with a physician, to be weighed, medically examined, and given instruction in food values and hygiene. Weight charts are kept and the children compete to see which can gain the most, or be first to reach the normal weight line. Social workers follow cases to their homes to discover all the factors which keep the child from gaining and do all work necessary to bring about right living conditions.

In spite of the many discouragements—for it often requires the sum of many visits and much teaching to cause the children to gain in weight, and some can not be made to gain at all—those who have worked in these nutrition classes are enthusiastic over the results. A recent editorial in the *Journal of the American Medical Association*¹⁶ says this concerning them: “. . . . When conditions of feeding, sleeping, exercise, etc., are supervised, the growth of the majority of stunted children can be promoted with almost startling rapidity. The weight shows almost perpendicular advances as soon as a chance for normal growth is afforded.”

The class method is economical of the time of all workers and the spirit of competition makes the rate of gain more rapid than under individual treatment. Smith,⁹ Kantor,¹² Emerson¹⁷ all believe that such clinics should be conducted not only in every dispensary but also in connection with the public schools.

2. *School Lunches.* Another method of dealing with malnutrition is by means of the school lunch. This, though not a new method, has never been made as vital a factor in health teaching as it could and should be. Miss Lucy Collier¹⁸ has prepared an interesting report on an experiment carried on last winter in New York City in which “a

¹⁴ A Demonstration in Health Education. Uzzell, *Survey*, June 1, 1918.

¹⁵ Nutrition Clinics and Classes. Manny. *Mod. Hosp.*, 10, 1918, p. 129.

¹⁶ Medical Help in the Undernutrition of Childhood. Ed. *Jour. Amer. Med. Assn.*, 71, 1918, p. 974.

¹⁷ Malnutrition Among School Children. Emerson. *Am. Sch. Hyg. Assn.*, 1917 p. 115.

¹⁸ Manuscript prepared by Miss Lucy Collier.

new type of lunch" was "administered so as to teach the gospel of health." The work was done under the joint auspices of the Post-graduate Hospital, the New York Lunch Committee, and the Peoples' Institute. Twenty-five boys, chosen from a large number of under-weight children in a certain school volunteered as Food Scouts. They ate specially planned lunches for a period of ten weeks and made every effort to do their patriotic duty; i.e., to get themselves up to normal weight. They met with Dr. Stark every Saturday to be weighed and advised, and social workers gave home help as in the malnutrition clinics. The gains made by the boys were most encouraging, and in summing up the experiment Miss Collier says: "The experiment has shown that the school lunch can be administered so as to teach children and parents the relation of good food, good habits, and good health."

3. *Fresh Air Classes or Preventoriumms.* The fresh air class has been employed for a number of years for tuberculous children but of recent years it is being used for malnourished children as well. Dr. McCord¹⁹ of Albany describes such a school of 50 children in his city. No tubercular children are admitted to this school. With nourishing food, fresh air, hygienic living, and physical and mental work suited to their condition, it is needless to say that the gain of these children in all respects is usually most striking.

The Public Health Committee⁸ report 75 of these schools in New York City, in which 1830 children are enrolled. Obviously this number of schools is far too small for the children in need of such treatment.

4. *The Children's Year Campaign.* The Children's Bureau by its campaign for children of pre-school age has centered the attention of the entire country upon this "the neglected age." The Bureau itself through its weighing and measuring and through its conferences on child welfare has reached an enormous number of children. Greater even than its own work, however, will be that which, through its publicity campaign, it has roused states, cities, social organizations, and physicians to do. Some cities (as New York²⁰) have instituted a house to house canvass to examine children for malnutrition, tonsils, adenoids and other disorders. Treatment will be advised and an effort made to educate the public as to the importance of proper feeding and care during this important period of the child's life.

¹⁹ Nutrition of the School Child. Preventive Work for Albany Pub. Schools. McCord. *Am. Sch. Hyg. Assn.*, 1917, p. 104.

²⁰ President's Address. *Jour. Amer. Med. Assn.*, 27, 1918.

Dr. Meigs²¹ in speaking of the result of the campaign thus far said that the number of cases of rickets and malnutrition in the clinics of one city alone had doubled during a month—the increase being due to cases discovered in the weighing tests and sent to clinics for treatment.

In addition to the agencies already described, there could be mentioned a number of others either directly or indirectly attempting to lessen the appalling number of undernourished children.⁸ Among these are the classes in cooking organized in the 59 Baby Health Stations of New York, the diet kitchens which have been established in the poor districts, and the fresh air camps where children can have a few weeks in the country or at the seashore.

In summing up their report on malnutrition the Public Health Committee⁸ made seventeen recommendations applicable to all organizations in any way responsible for the child's welfare. These recommendations include a wide educational campaign on diet and hygiene, the extension of malnutrition clinics, an increase in the number of fresh air classes and summer camps—these latter to have better supervision in diet and sleep than heretofore—and the extension of school lunches with control exercised in their sale so as to insure proper selection of food. The carrying out of these recommendations would mean the coöperation of schools, clinics, welfare agencies, and health authorities. It would demand, for the most part, not the establishment of new agencies and new lines of work, but merely the use of existing ones to the limits of their capability. Such a union of forces all working towards a common end could not fail to help solve to a considerable extent the problem of the undernourished child.

“Buy what thou hast no need of, and ere long thou shalt sell thy necessities.”

²¹ The Children's Year Campaign. Grace L. Meigs. *Jour. Amer. Med. Assn.*, 27, 1918, p. 243.

THE OFFICE OF HOME ECONOMICS

SOME RESULTS OF RECENT WORK¹

C. F. LANGWORTHY

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The work of the past year, and this means the fiscal year ending June 30, 1918, has been influenced, in a large measure, by the war situation, particularly for the purpose of furnishing reliable data regarding the use of the available food supply in a rational and economical way and at the same time providing a diet which conforms, so far as it can, to general dietary preferences. Attention has also been paid to thrift in the use of clothing, household supplies, and household equipment, and plans have been made for developing this work extensively in the coming year. In addition the regular experimental and research work of the office has been continued and so shaped as to contribute to the war emergency situation.

Coöperation with other bureaus and with other departments is a feature of the work of the Office of Home Economics. Such relations in the Department of Agriculture have included work with the Bureau of Chemistry on the use of dried fruits, vegetables, and other products, and similar work with the Bureau of Animal Industry on the use of cottage cheese and other matters relating to the food value and uses of milk, and with the Bureau of Entomology with respiration calorimeter studies of the problems of the wintering of bees. Coöperative work with other departments has included the Department of Commerce, the Bureau of Education, the War Department, the Food Administration, and the Woman's Committee of the Council of National Defense. To ensure close relations with the Woman's Committee request was made for a special representative from the Department of Agriculture and Miss Helen W. Atwater of this office was appointed.

Conferences, committee meetings, and more informal discussions have characterized the coöperative work. Policies to be followed and lines of work to be undertaken have been thus determined or communicated.

¹ Presented at a meeting of the Science Section, Eleventh Annual Meeting of the American Home Economics Association, Chicago, June, 1918.

A good deal of special work has been undertaken, like that in coöperation with the Food Administration on emergency food preparation, like the studies of the digestibility of bread from flours including different proportions of the wheat kernel, and the Dietary Survey in coöperation with the Bureau of Markets, requested by the Food Administration. Cards, circulars, bulletins, and other published material have resulted from the coöperative work.

With the Food Administration and the Bureau of Education a pamphlet "Ten Lessons," was prepared and widely distributed. This summarized much information on food conservation topics. To further conservation work a special series of food leaflets, brief and concise in form and nontechnical in character, has been prepared in coöperation with the Food Administration. These were planned as the result of a conference of home economics workers and leaders. They have been very generally welcomed and have proved useful in extension work of the Department and other similar movements and have been used in homes and in nearly all lines of food conservation work. The total number required to meet the requests for them has exceeded 21,575,000. Dr. Katharine Blunt had charge of this project and was assisted by Miss Florence Powdermaker and Miss Louise Prichett.

Four special circulars, "Use Peanut Flour to Save Wheat;" "Use Barley to Save Wheat;" "Use Soy-bean Flour to Save Wheat, Meat, and Fat;" "Use Potatoes to Save Wheat," have also been published and a bread card giving general directions for using wheat substitutes in the making of similar dishes, also a card giving directions for making yeast-raised bread with large proportions of wheat substitutes. The preparation of Farmers' Bulletins and short summaries on food and other home economics topics has been continued. Though the editions have been large, the demand for this popular literature has exceeded the supply.

The Office of Home Economics and the Bureau of Education also coöperated with the Food Administration in the preparation of a series of outlines for three courses of instruction in food conservation designed especially for women college students. This work was done under the direction of Dr. Blunt. Originally issued in multigraphed form this material has now been brought together in a book entitled "Food and the War." An abridgment entitled "Food Guide for War Service at Home" was also published.

A series of lessons entitled "The Day's Food in War and Peace," which has recently been published, with suggestions for their effective use, represents coöperation between the Food Administration, the Woman's Committee of the Council of National Defense, and the Office of Home Economics. These lessons were edited by Miss Atwater and Mrs. Norton.

One of the functions of the States Relations Service, of which the Office of Home Economics is a part, is to serve as a clearing house and central bureau for a number of state activities, particularly with reference to the work of the experiment stations and agricultural colleges.

In this connection, the Office of Home Economics collected information chiefly from the Home Economics Departments of Agricultural Colleges regarding the experimental and research work in home economics which is being carried on, in the belief that such information would help all to do more effective work. Replies to the questionnaire which was sent out were received from most of the institutions, and a digest of the data received was submitted at the Home Economics meeting preceding the meeting of the Association of American Agricultural Colleges and Experiment Stations, Washington, November, 1917. As was to be expected, the work carried on in the majority of the laboratories had to do with food and its uses along war emergency lines. Immediate use was made of some of the information and it was requested that this collection of data be continued.

To speak in greater detail of some of the work of the Office of Home Economics, studies of digestibility and food value which were carried on by Dr. A. D. Holmes in connection with the studies of the utilization of food in the body, have been numerous and have included a variety of foods. The results obtained both with mature and immature dasheens grown under controlled conditions have shown that this starchy root is well assimilated, the digestibility of the carbohydrate, the principal food constituent present, being 98 per cent. No physiological disturbances were noted when dasheens were eaten in quantity and apparently they are to be regarded as a good source of carbohydrate. Results are reported in full in United States Department of Agriculture Bulletin No. 612, "The Digestibility of the Dasheen."

Continuing previous studies of the thoroughness of digestion of edible fats, the following coefficients of digestibility were obtained with a variety of nut oils: Almond 97.1, black walnut 97.5, Brazil nut 96.3, butternut 95.4, English walnut 97.6, hickory nut 99.3, and pecan nut oil

96.8 per cent. In these digestion experiments the nut oils were well tolerated, although English walnut oil, when 70 grams were eaten daily, was found to be slightly laxative. Results are reported in full in United States Department of Agriculture Bulletin 630, "Studies on the Digestibility of Some Nut Oils."

The study of fats and oils included a number obtained from seeds. The coefficients of digestibility obtained were for corn oil 96.8, soy bean 97.5, sunflower-seed 96.5, Japanese mustard-seed 98.8, rapeseed 96.7, and charlock-seed 98.9 per cent. The results obtained indicate that these seed oils, properly refined, may be regarded as satisfactory food fats. With the exception of Japanese mustard-seed oil no laxative effect was noted. The results are reported in full in United States Department of Agriculture Bulletin No. 687, "The Digestibility of Some Seed Oils."

At the request of the Bureau of Fisheries the nutritive value of grayfish, a food which promises to be of great importance, was studied. This fish compared favorably, as regards thoroughness of digestion, with Boston mackerel, butterfish, and salmon (canned). Results are reported in full in United States Department of Agriculture Bulletin 649, "Experiments on the Digestibility of Fish."

Studies of the digestibility of flour made by grinding soy-bean press cake and peanut press cake show that these products are well assimilated. Coefficients of digestibility of protein were in each case 85 per cent, in round numbers. The results are reported in full in United States Department of Agriculture Bulletin No. 717, "Digestibility of Protein Supplied by Soy-Bean and Peanut Press-Cake Flours."

Studies on the digestibility of wheat bran, unground, coarsely, and finely ground, eaten in the form of a flour-free bread, have also been made and the results have been prepared for publication.

Digestion studies with corned seal meat and some miscellaneous tests have been made also but not yet reported on.

In addition to this work a large number of digestion studies have been made and the relative food value studies of wheat flours representing different percentages of milling in comparison with the flour fixed upon by the Food Administration as a standard (74 per cent of a 90 per cent extraction). The data already accumulated are extensive and available for Food Administration uses as needed. It is expected that general conclusions, what the Food Administration had in mind when the work was requested, will be forthcoming.

The experimental studies of energy expended in the performance of different household tasks, made with the respiration calorimeter, were continued, with Mr. H. G. Barott in charge of the respiration calorimeter laboratory. The results are in full accord with those previously obtained.² The work was so planned that it would not only supply data regarding the relative energy expenditure for different household tasks but also, when considered in connection with time studies of the housekeeper's day, a project on which Miss Ilena M. Bailey is engaged, provide more definite information than we now possess regarding the energy expenditure for household labor as a whole.

In these studies the subject, Miss B.—21 years old and 5 feet, 5 inches tall—carried on a number of tasks in the respiration calorimeter chamber, the energy expenditure for each task being measured in comparison with the energy output when at rest under conditions which were otherwise the same. The various tasks were carefully worked out as regards number and sequence of motions involved; and, in order that the tempo of the work might be uniform, were timed to the beat of a metronome. Each task was repeated over and over for two hours. To insure uniformity the subject always entered the calorimeter at the same time (early in the forenoon), having had a simple breakfast (a cup of cocoa made with cream, one teaspoon sugar, and two teaspoons cocoa) and always wore the same clothing.

A report of the experiments now being prepared for publication will show in detail the character of the results obtained. In general it may be said that in all the experiments the energy expenditure of the body when work was performed was greater than was the case in the tests where the subject sat in a chair at rest. The least increase (7 calories per hour) over the energy expenditure at rest was noted in tests in which the subject was engaged in plain hand sewing (30 stitches per minute). Simple tasks like crocheting, embroidering, darning hose, and knitting call for much the same energy expenditure as plain sewing. The largest increase (49 calories per hour) over the energy expenditure at rest was noted in laundry work—washing towels which were rubbed 35 times per minute on the board. Practically the same increased energy expenditure (48 calories per hour) over the energy expenditure at rest was noted in sweeping a bare floor (38 strokes with the broom per minute).

² Results not yet reported in full. Brief summaries are given in: Report of Director, Office Experiment Stations, 1914, p. 1415; Report of Director, Office Experiment Stations, 1915, p. 18; Report of Director, Office Experiment Stations, 1916, p. 31.

Washing dishes and ironing requires less energy than these heavy tasks and more than the light tasks referred to. The results, with respect to what may be considered heavy and light tasks, are in accord with those found in earlier respiration calorimeter experiments, briefly summarized in a report which states that dish washing made greater demands on the body than sewing.³ Another conclusion drawn from the earlier experiments was also substantiated, namely, that the kind of equipment used is important, unsuitable equipment involving increased energy expenditure.

The question naturally arises whether the results obtained with other subjects would be similar to those obtained with Miss B. It is planned to study this point further. It is interesting to note that in comparable tests the results of the later experiments are in agreement with those obtained in previous tests with other subjects but which have not yet been reported.

The dietary survey project carried on in coöperation with the Bureau of Markets called for the collection of data from housekeepers, institution managers, and others, blanks being furnished on which to record the data regarding the food consumed for a period of seven days together with food used, number of persons in family, general occupation and related data. The distribution of blanks was planned to take into account urban and rural regions and variations in food habits and in family incomes and standards of living. Boarding houses, college clubs, homes for children and for the aged, and other public institutions were included, food problems of groups larger than the family being very important in relation to the general food situation. In furthering the interests of this dietary project, home economics workers have rendered valuable assistance in distributing and collecting blanks, making studies, and in other ways. The response from housekeepers and managers of public institutions has been very generous and to their willingness to help the success of the project is largely due. Over 1,000 dietary records have been received and in addition several hundred more have been definitely promised. Many housekeepers who have already completed one study, and thus realize the amount of work involved, have promised to make other studies at intervals during the period of the war. This again illustrates the fine spirit with which the women of the country respond to calls for patriotic service.

³ Report of Director, Office Experiment Stations, 1915, p. 18.

Miss Vera Spinney and Miss Matilda McKeown shared the responsibility of the dietary project with Miss Lucy Gillett as consulting expert. It is planned to keep up with the accumulation of material by discussing the dietary surveys in groups of 100 and in the published reports to include important mineral constituents—calcium, phosphorus, and iron, as well as protein and energy. A summary of the results obtained in public institutions has been made by Miss McKeown⁴ and a full report is being prepared for publication.

In addition to a short account⁵ of the methods followed and the results obtained in the study with a group of 116 families, Miss Spinney has prepared a report which discusses the results in full. The studies included were made at the beginning of the dietary survey, that is, shortly after the war emergency food situation developed, and, while they represent war conditions, may be assumed to reflect them less than will those received later which are now being prepared for publication.

The group of 116 families was subdivided for discussion according to occupation as follows: Mother Wage Earners; Garment Workers; Laborers; Retired from Active Occupation; Clerks (office); Mechanics; Teachers; Professional Men; Engineers; Salesmen; Farmers. The average yearly income in the different groups, excepting the farmer group from which no data were obtained, was \$1884, the range being from \$640, with the mother wage-earner group, to \$2527 for the salesman group. The average cost of food per man per day was 46 cents; the lowest cost, 32 cents, was noted in the mother wage-earner group; and the highest cost per man per day, 56 cents, was in the professional men group. On an average the diet supplied 94 grams of protein, 119 grams of fat, and 445 grams of carbohydrate per man per day with an energy value of 3230 calories. The largest protein consumption was found in the garment makers group (109 grams) and the mother wage-earner group (105 grams); the smallest (85 grams) in the professional engineer group. The largest amount of energy (3585 calories) was noted in the farmers group and the smallest (2895 calories per man per day) in the mother wage-earner group. Although the data summarized are not extended enough for final deductions, the studies seem to indicate that there was an increased consumption of sugar, fresh fruits and vegetables, and fats obtained from

⁴ Presented at the Institution Economics Section of the American Home Economics Association Meeting, Chicago, June, 1918.

⁵ Presented at the Science Section of the American Home Economics Association Meeting, Chicago, June, 1918.

vegetable sources, as compared with results obtained in previous dietary studies. From the results brought together in the report of this group there is no indication of undernourishment.

An intensive study of methods and results of extension teaching in a county in Michigan has been made for the Office of Extension Work, North and West. The deductions are of general as well as local interest. Miss Ilena M. Bailey had charge of this work.

Extended experimental studies of domestic methods of canning have been continued and results of much value have been obtained. This work is in charge of Harold M. Lang.

The war emergency food situation has meant greatly increased public interest in food preparation, meal planning, and dietetics. Much attention has been given to work along these lines and to the preparation of popular summaries, charts, and other illustrative material by Miss Caroline L. Hunt. Two popular bulletins have been prepared and await publication, while some of the results have been summarized in the paper entitled "Changing a Peace-Time Ration for War Time."⁶ Chart material was prepared to meet emergency needs as a part of the Department's general plan for exhibits for various purposes. In general it may be said that, as occasion required, the data Miss Hunt has brought together have been made available for special war emergency needs and for the use of the extension offices of the States Relations Service.

An important part of the year's work has been the equipment and operation of a laboratory kitchen where work has been carried on to meet the needs of the emergency food situation as well as general needs. Miss Jean MacKinnon was in charge of this work. A demonstration kitchen laboratory for use in coöperation with the Office of Extension Work in the South and the Office of Extension Work in the North and West, of the States Relations Service, extends the usefulness of the laboratory kitchen project, and this whole line of work is being further developed. Coöperation with the Food Administration has been an important feature of it.

The Office of Home Economics, like other government agencies, reaches the public not only through its publications but also by correspondence, conferences, and in similar ways. This feature of its work has grown extensively and represents what is probably one of its chief contributions to the war emergency situation because in this way it secures direct contact with the individual worker, a contact which the office feels is fully as helpful to itself as it can possibly be to others.

⁶ *Jour. Home Economics*, 10 (1918), No. 8, pp. 371-374.

WELFARE WORK IN A MINING TOWN

ISABELLA CHILTON WILSON

Welfare Director, Logan Mining Company, Logan, W. Va.

Earling is a mining town situated in a mountainous country where the valley is just wide enough for a railroad track, the county road, and a narrow string of houses. Of its 200 homes, three-fourths are on a sloping mountain side; twenty-five are down in the narrow valley, and twenty-five are in a little hollow which winds around one side of the mountain. The houses are four- and six-room frame buildings. The scenery of this portion of West Virginia has a natural rugged beauty that contrasts vividly with the ugliness of a new mining camp.

Few of the houses were inviting in the slightest degree. The hillside on which most of them stood has a yellow clay soil, and, at the beginning of this work, there were neither trees nor flowers nor grass to make it less unsightly. Few people had made any attempt whatever at a garden. What gardens there were had been fenced in by tree branches, chicken wire, or some other crude fencing material that added to the ugliness of the scene. The sun beat down all day on the yellow hillside, where piles of cans and ashes stood by every doorstep. Almost every family had a cow and two or three hogs that were running at large, adding to the confusion by rooting among the cans and ashes. Every house had a dog or two. Flies were everywhere, and no one had screens.

To reconstruct this town on sanitary lines was the problem of the Welfare Department of the Logan Mining Company, and this was to be done in response to the desire of the people, going no faster than they wished, and than their help and coöperation could be counted on. It would have been much easier to have given the town a thorough cleaning and to have made cleanliness compulsory; but we believed that the voluntary method would give better returns in the long run.

The miner has on an average a family of eight. If he is thrifty he has a better chance than many other wage earners to raise his scale of living. Many miners made \$250.00 per month during the war, yet as a class they were not saving money, though as an expression of patriotism rather than of thrift they subscribed well to the Liberty Loans, and bought War Savings Stamps. If a man can be persuaded to save, the chances are ten to one that his living conditions will improve; his family will be better kept; and his home become neater and cleaner.

The miner and his family are as a rule of a suspicious disposition, due to lack of education and to the fact that so many of them have been swindled by various agents.

When our welfare work began in June, 1917, it was an unprecedented departure from any former experience of the miners, and our first work was to get them to trust us, and to gain their coöperation.

The beginning was with a class in cooking, meeting each Monday afternoon at one o'clock. We placed a very simple equipment in the school house, and taught plain cooking to a class of fifteen girls. We had picnics two or three times that summer and continued the work in cooking through the school term.

The next step was canning demonstrations given to the women; then came weekly visits to the homes. We explained very carefully to the women that the Mining Company wanted to help them have better homes and that if they would do their part, we would do ours. Garbage wagons were sent around each week to haul away cans and ashes. We had given the 25 best families garbage cans, arousing in the others the desire for them. They were told that they could have cans too if they would clean up their premises. They did this, and now every person has a garbage can, and complains bitterly if it is not emptied every week.

In April "hogtight" fences were built around each house; the people were given eight varieties of hardy flower seeds, a bulb of canna, and a root of dahlia. Each family was also given grass seed to sow his lawn and enough fertilizer to give the grass a good start. To encourage the people, who had lived so long without yard or garden, to do the needed work, the Mining Company offered a first prize of \$15.00 for the best yard, and a first prize of \$15.00 for the best garden, and a second prize of \$10.00 for each. Much to our encouragement almost every family tried to improve their surroundings so that by the first of June the hillside was covered with a mantle of green. By July the yards were in their prime. Cannas, marigolds, snap dragons, nasturtiums, cosmos, sunflowers, castor beans dahlias, petunias, were all in bloom and the yellow hill was buried under them.

Each family raised a war garden. Some of the men went back in the mountain and "scrubbed out" two and three acre patches. Every week the gardens were inspected and the people were told what preventives to use for chewing and sucking insects and for fungous and bacterial plant diseases.

In November a Norway maple and a poplar tree were planted in each front yard. Later cherry and apple trees will be planted in the back yards.

A playground was put in at the school house in the fall, since the children had very little opportunity for exercise. Here on the giant stride, the swings, the slicky slide, the see saws, they develop their muscles while enjoying their play, and grow towards strong manhood and womanhood.

A course in domestic art and domestic science is given credit at the district high school, and the boys and girls are urged to go to high school.

The school term was only seven months; it was extended to nine. A Red Cross Chapter was formed among the women, meeting in a vacant room over the store building. A sewing machine and a table have been donated to them.

Earling is now a clean, self respecting little town with many pleasant homes. All that has been done has been done voluntarily and step by step as the people were ready for it, and as they wanted it.

We believe that this year's experience has shown that it is better to work with the people, educating them to what we want, rather than forcing them beyond their desires. They are better content to advance step by step than by one big jump. We have been keeping our labor during war time by this welfare work, and we expect that, with the coming of peace, results will be even greater than now. The self respecting working man will desire to raise his family in wholesome surroundings.

"A penny saved is a twopence clear,
A pin a day is a groat a year."

THE CULTURAL VALUE OF HOME ECONOMICS

LAURETTA FANCHER

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The other day, I looked up the meaning of the word "cultural." I was weary of hearing about the "culture" which a college course gives, that is, every course except the home economics course. As for that," the chemistry professor remarked patronizingly, "it is most convenient to have, but its cultural value is nothing." And so I looked it up in the dictionary. What is it—this elusive "culture?"

This is what I found: the training, development, or strengthening of the powers, mental and physical, or the condition thus produced. The original meaning is of course, cultivation—the tilling of the soil of the mind. When we speak of a cultured person, we mean one whose mind has been trained, yet cultural education has come to mean ancient languages and dead philosophies as if that were the only method of drilling the mind.

It is interesting to note that the cultural education of today was the practical education of a former period. The one time business man was required to understand Latin to carry on his work as apothecary, or clerk, or scribe. Yet after shorter methods had been introduced and the typewriter succeeded the penman, the old form of education lingered.

Without denying that the study of Latin is good mental discipline, are there not other subjects which give a similar training and in addition are of practical value?

The college course in home economics must include the subjects with which every person should be familiar and which each course requires—English, history, and modern languages—and it should leave room for electives; but taking the special subjects—how do they develop the powers of the mind and body?—for we must remember that our definition speaks of "mental and physical powers."

When I first took lessons in cookery, I was afraid to separate the yolk of an egg from the white. We worked in pairs and I was always very busy gathering materials, washing dishes, anything but the constructive work. One day my partner was absent. I made a cake which was a success. From that day I gained confidence in my own ability to accomplish results. I grew daily in self reliance and the power of initiative. I have seen the same thing work out in students, seen girls de-

velop and grow mentally through the study of cookery. Girls, perhaps fine Latin students, would come into my classes shrinking from measuring a half teaspoon, afraid to take one step without help, and have gone out at the end of one year capable and self reliant. Responsibility means growth here as elsewhere. The correlation of hand and brain is taught in every branch of the course, thus developing thought followed by action—the physical and mental work together, side by side. Nothing produces accuracy more effectually than the lessons in mechanical drawing, where every dot must be measured and a sixteenth of an inch becomes unlimited space. At the same time that the girl is learning to draw house plans, she is building accuracy into her mental house. If she can draw clear cut plans, she will think clearly, she will not exaggerate. The same, in lesser degree is taught in sewing. When a girl learns to make a straight, neatly finished seam on a piece of crepe de chene she has learned not merely how to make a fell seam—that is the least of it—she has made a path for accuracy and neatness in her brain cells.

The imagination is developed in a dozen ways—planning menus, color schemes, flavor combinations, dresses, hats. Reason, of course, is continually brought into play in such simple examples as planning costs, but a stiff course in dietetics will bring it into full play. Judgment is acquired in every subject in the course. Take the comparatively simple matter of making a cake—the consistency of the batter, the heat of the oven, tests of baking—all bring judgment into play. This is but one example. Others may be found in the testing of textiles and of food products and many other processes. Attention and deliberation are fostered in the theoretical side—in classes of textiles, or food study, as in other textbook classes.

“I do not expect my pupils to remember the subject matter taught them,” remarked one teacher. “It is the mental drill that counts.”

I do expect my pupils to remember what I have taught them—they are vital things which the girls will need to use in life, but they have also been given the mental drill—the culture of the mind. And therein lies the wonderful effectiveness of home economics, in the combination of practical and cultural.

OMICRON NU NEWS

Through the courtesy of the JOURNAL OF HOME ECONOMICS, Omicron Nu has been given a page for printing news and ideas of interest to the various chapters and to home economics people in general. To enable us to make best use of this space it will be necessary for each chapter through its editor to send me items and information suitable for the page. Copy should be in by the fifteenth of each month so that it may be edited and sent to the JOURNAL for publication.

ELIZABETH INGERSOLL, *Acting Editor*,
Iowa State College, Ames, Iowa.

Alpha Chapter. At Michigan Agricultural College student girls under the direction of the Home Economics faculty, helped to prepare and serve meals to the soldiers who were ill in camp there. This work was described in the December JOURNAL, page 552.

Zeta Chapter. At Nebraska University the captain of the companies stationed there, sent an "S. O. S." call to the Home Economics Department to feed the two hundred and fifty sick men in his charge. By the next day these men were being served special diets prepared in the model practice kitchen of the University.

Iota Chapter. At Kansas University a cafeteria has been opened under the direction of the Home Economics Department. Miss Ruth Stevenson, an Omicron Nu girl, is in direct charge and has as her assistants students of the institutional cooking class, the special problems class, and three paid helpers. The working plan is so divided that each student has a definite responsibility and has a chance to do each phase of the work.

The girls in charge of the counter and floor wear white Hoover uniforms. The object of the work is not to make money but to give the public wholesome, home cooked food at a reasonable price and at the same time offer practical experience to the home economics students in institutional cooking and management.

The chapter is taking up child welfare work in Lawrence, Kansas.

Eta Chapter at Wisconsin University has established an Omicron Nu Scholarship fund with which they hope to be of assistance to some deserving home economics student.

Epsilon Chapter at Urbana, Illinois, has adopted a French war orphan.

FOR THE HOMEMAKER

MAKING CHILDREN WORTH WHILE¹

ALMA L. BINZEL

Director of Kindergarten, Northrop Collegiate School, and Lecturer in Child Study and Education

When Ellen Key wrote a book and named it "The Century of the Child," neither she nor her readers foresaw the tragic event that would hasten the higher evaluation of child-life, an evaluation that expressed itself in increased activity in campaigns for "The Better Babies Movement," "Saving the Seventh Baby," and "Child-Welfare Weeks." The program for the Children's Year included all the younger children of every state. Will it leave parents on no higher level than is indicated by the composition of a Springfield boy who wrote as follows on The Children's Year: "It is everybody's duty to have a baby this year and to save it." Or, will The Children's Year lift parents to an understanding of what babies are to be saved for? For what are children to be kept well?

The conservation of life in the physical aspects of keeping many more babies alive and keeping many more of them well is naturally and necessarily a first aim in the various child saving movements. Both of these aspects have met with some ridicule, some opposition, and some skepticism. The fact that some babies survive and thrive under the worst possible conditions while others languish and die under choice conditions gives to many a person ground for the contention that all the modern ideas about the rearing of children are unnecessary and often ineffective. Since they have individual cases in their own families, neighborhoods, and small circles to give as evidence, statistics, such as the Children's Bureau, the Baby Clinics and Hospitals have to offer, carry to them no conviction.

¹ Presented at the Eleventh Annual Meeting of the American Home Economics Association, Chicago, June, 1918. Printed in part only.

Much that is unwise in the rearing of children is due to the indifference, the inertia and the lack of insight that arise from unpreparedness for the responsibility. Each generation of graduates from the eighth grade and high school courses in home economics should increase the number of homes in which babies and children will have better chances for survival and health. Many vision a time when the compulsory period of education shall embrace, for at least every girl, the basic hygienic, sanitary, and dietary principles and their application in concrete situations.

My hope is that as plans for courses in the physical care of children are defined and redefined another aspect will be taken into consideration, a new aim with the older campaigns, that of giving more children a good start socially and mentally. This means coöperation in the effort to have parents understand the fundamental psychological facts of child-life as well as its fundamental physiological ones from infancy upward.

I have frequently tried to name the classes into which the mothers whom I have known may be grouped. At the bottom of the list are the slacker and the indifferent mothers. So far as their training of children is concerned, they are equally undesirable. The former is the one who deliberately refuses to respond to appeals which she sees her children making; the latter is the one who fails to respond, because she is blind to their appeals. Other interests claim her attention and time. Those who have read "The Poor Little Rich Girl," or seen it played, will recognize the extent of the blindness that may be induced by other interests. The interests may be of the lighter, socially frothy type, the more serious ones of self-development, or the very responsible ones of war service. The effect upon the children of the resulting blindness is equally bad in each case.

Immediately above these are the well-meaning but ignorant and the imitative mothers. So far as their training of children is concerned there are possibilities. Their technique in the handling of their children can and will be improved by proper instruction and good example. I am quite certain that it was a well-meaning mother who tried to make her four and a half year old son obedient through the repeated use of the following method: That of holding baby sister over the banister of the third floor in the hotel which was temporarily their home and threatening to drop her in case son did not do as he was bidden. This mother was not ignorant in the ordinary sense, for she was the attractive wife of an Episcopal clergyman. She was not a vicious woman; she was

just unfortunately ignorant of the right ways of training her son. She set him in this instance a decidedly bad example in the way of deception, for she could never have fulfilled her threat if the boy had persisted in disobedience; in the way of suggesting unjust punishment to an innocent "bystander;" and in the way of suggesting a cruel act which, if imitated by the son in dealing out punishment to an offender, might result in death or injury of the offender.

The best single illustration of the imitative mother I ever saw was she who trained her daughter to be absolutely dependent physically. Daughter came to kindergarten when she was five years old. She stood, literally waiting to be peeled out of her mittens, rubbers, wraps; she had none of the muscular development and coördinations that characterize the child who has been trained, educated to wait on herself. The mother had been a nursery maid in one of the best families of the town; she was "imitating" in her own home the ways of this other home. She had been a servant to other people's children; she became one to her own.

Next to well-meaning and imitative should be placed the intuitive and the intelligent mothers. The former, with little conscious effort, secures what the latter arrives at from carefully thought out efforts. The intuitive mother is like the intuitive teacher, nurse, preacher, and doctor; we have heard them named the "born" teacher, nurse, preacher, and doctor. But notice the difference in the way society treats the "born mother" and the "born teachers, nurses, preachers, and doctors." It allows the mother to go pretty much her own way in the entrance to and continuance of her work. Not so with the others. Of them society has required special preparation, ranging from one to eight or more years of work beyond the completion of the eighth grade. Is society wise in making no direct requirement for preparation on the part of the mother?

It was an intuitive mother who sat next to me in a street car some months ago. A charming child of two and a half was on her lap. Recalling the new toy in the paper sack, she asked for it. Pleasantly, but positively, the mother replied: "You may have the toy when we get to Aunt Katherine's. She has a yard large enough for the noise this toy will make. The street car is too small; there are people in it who would be disturbed." There was absolutely no protest on the part of the child. Her mother had made no special study of child-nature but as situations arose she sensed the principles involved and acted accordingly.

Compare her with the mother of that daughter who is the heroine of the following incident. A trip to town had been planned. It did not include daughter who wanted very much to go in order to talk some more to a new friend—a guest for the night at the country home. She said to him, “When I ask Mother to let me go she will say, ‘No, not today.’ Then I’ll begin to tease and she’ll say crossly, ‘Oh, don’t bother me. Run away and play.’ Then I’ll whine and she’ll say, ‘If you don’t stop and go away, I’ll punish you;’ and then I’ll beller and she’ll say, ‘Well if you must go, go. Put on your clothes and be ready.’” My friend was much interested in this clear exposition of the method of managing mother. He moved within earshot of the room in which the scene was to take place. It proceeded just as it was planned. Shortly after, this girl of ten was in his presence, tears still on her eyelashes and the question “Did you hear me?” on her lips.

The intelligent mothers are those who, recognizing the complexity of the problem of training children and their own limited knowledge for the solution of this problem, deliberately set themselves to work to acquire the necessary knowledge.

She who wishes that “Babies came like breakfast food with directions for preparation and serving attached,” voiced the yearning of countless mothers who are earnest and eager to know and do the right. Unfortunately, merchants and manufacturers do not include in their “demonstration work” demonstrators who know child life in its impulsive and emotional, its intellectual and social aspects. Neither do most of our higher institutions of learning, responsible for courses for farmers and farmers’ wives, for community weeks and the like, include work that will train people to be intelligent educators of their children as well as generous providers and efficient caretakers of them.

What are the characteristics of the next group, the artist mothers? Exactly the characteristics that apply to all “artists” regardless of the medium in which they express themselves. Is it not true that the “artist painter” must mean well as he undertakes a new picture? Is it not true that he must have absorbed the best that other pictures embody? Is it not true that he must have a basic intuitive appreciation of color, action and composition? Is it not true that he must have an intelligent, clear understanding of the laws of his art and the materials he proposes to use? Is it not true that all these must be shot through with that emotional element of devotion which transforms the necessary labor and drudgery into joyful activity?

So the artist mother is one who "means well" as she undertakes the training of a child. She is the one who has absorbed from literature and life choice examples of the technique of handling children. She is the one who has an intuitive appreciation of finely developed child-nature wherever she sees it. She is the one who has clarified and intensified this appreciation by a study of the laws by which such development can be brought about in her own children. It is she whose radiance and joyousness are never greater in any activities than in those connected with the development of "human master-pieces"—her children.

Of the two, the artist mother and the artist painter, the former has the more difficult task. Her material is never the same. Forces from the inherited nature of the child, and other forces from the world outside mingle to complicate her task. How very important, then, that she should have some guidance other than chance may bring her!

How naturally and logically the child may be described as a bundle of hungers! The first of these, the hunger for physical comfort, when properly provided with food, sleep, quiet, and cleanliness, results in keeping the child alive and healthy. The second of these, the hunger for sensory and motor activity, should receive its satisfactions through opportunities for free movement of the limbs, for manipulating objects by the hands, for participation in dressing and undressing one's self, for more vigorous plays with toys and games, for participation in household, gardening, and other manual activities. A third hunger goes by the name of curiosity. The child's countless questions, his inquisitiveness, his efforts to take things apart, his jaunts away from home, his imitations of persons, animals, and things, are all so many evidences that nature means for him to know the world into which he has been called. The fourth hunger is satisfied only as opportunities are provided to see beauty in color, form, and texture; to hear it in language, literature, and music, and to express it in various mediums.

A fifth hunger is that of social participation. Man is so made that he seeks companionship with his kind for purposes of protection, defense, progress, and recreation. The motives that lead to such companionship, the emotional attitudes that are established through it, the technique of adjustment to others that result from it are being analyzed today as never before. Socialization has long been the watchword of the progressive schools of our country. It must come to be understood by parents as a process essential to successful rearing of children at

home. That it is not, is evidenced by the countless misinterpretations of "teaching children to obey" which any one who is thoughtful sees in the homes of friends and acquaintances, in shops and hotels, on trains and steamships. One tragic illustration has already been cited. The following is equally so, but with a humorous halo of which the mother was quite unconscious. She said to little daughter, "Put on your sweater!" "No, I don't want to," was the response, whereupon mother helped the child to obey (what?) by saying, "You know I rule you by love, not fear. Put on your sweater or you know what you'll get."

Fully as prevalent as the mal-education in obedience to authority, is the mal-education involved in that form of amusing one's self, known as teasing. How often does one see a little child, irritated beyond his power of endurance by a fond father, uncle, or friend, try to defend himself finally in a primitive, physical way by striking the offender, only to be unjustly reprimanded or punished by his own mother. Such a child, growing older, subjected to modified forms of teasing, is bound to have rebellious, angry habits of feeling established that are as much a handicap, as any physical lameness would be. There came to me, at the close of a lecture on teasing, a mother who said, "What you have said this morning in your analysis of teasing describes exactly the situation in my home. My husband has tormented me to the verge of tears and rebellion countless times; my son of fourteen years is growing passionately resentful towards his father's and the older son's persistent teasing. Half of our family is prosaically truthful; the other half is given to fanciful and humorous exaggerations which spare no one's feelings. To the latter, teasing is a game in which they feel pleasure because they are the victors; they do not appreciate the misery of their victims. What shall I do?" Prescriptions for treatment of cases like these may be given as effectively as rules for giving more adequate food or recipes for better bread.

The sixth hunger is that which has fostered the development of the religions of the world. The human mind can not help asking for the causes that lie behind the phenomena, so apparent to it. The trees bending and swaying in the wind lead to the question of cause of the blowing; the answer "wind" leads to a second—"What makes the wind blow?" The answer to that, by the average parent, is "God." My attention was attracted anew this spring to this problem of the religious training of children. The children (ranging in age from three to six)

were enjoying with me the early spring flowers. To my question, "Who planted these tulips?" had come the answer, "Our gardener." To the next question, "Who planted these hepaticas?" came, from a dozen lips, the word, "God." And I wondered why children were still being taught to name the work of nature undirected by man as God's handiwork in distinction from that done by nature as directed by man.

Later we were discussing the possibility of clear weather on the day for which we had an invitation to the country. I had said, "We will go on Thursday if it doesn't rain," whereupon a girl of six years said: "But, Miss Binzel, it won't rain Thursday. I shall pray to God tonight and tomorrow night for sunshine and it won't rain." Thursday came and with it torrents of water. Again I wondered why children were still being taught to pray for the things which involve the suspension of physical laws in order that personal desires may be fulfilled. I wondered, too, how many grown-ups are arrested on that level of prayer which means the suspension of social and mental as well as physical laws.

A friend of mine has a niece whose prayer ended with, "God bless Father, God bless Aunt Margaret, God bless Aunt Lou. God bless me and make me a good girl." A few nights later, the prayer was increased by these appeals: "God make Rosie (the maid) a good Rosie. God make Teddy a good Teddy Bear." Is there danger that prayers so couched will direct thought and behavior towards non-responsibility for making ourselves good?

The foregoing analysis of the child as a bundle of hungers, each with its manifestations which the parent can see, and which the parental mind should be trained to satisfy, is one of several that might be used by parents, old and young.

That countless mothers are in need of guidance and that many are seeking it, is evident. Magazines are devoting more space than ever before to topics relating to child-nature; more and better books are being purchased and read; mothers, in larger numbers, are attending child-study and child-psychology courses; the kindergartner, by example and explanation, is showing what the possibilities of the early years of childhood are; but all these are insufficient for the task. Is not the time ripe for the assumption of more of the responsibility by the Home Economics Movement? Is it not logical that this movement should take over a great share of it?

This movement has been backed by federal authority and funds as no other aspect of woman's work has ever been. With the additional sanction and publicity of the Food Administration you have reached the more remote people of our country. Can you not extend your program to include more definitely the understanding of the needs of the child other than his physical ones?

My plea today to this Association is that you make the wonderful service you have already rendered a greater service by the inclusion of courses in the understanding of child-life in its social, mental, and spiritual aspects in the training of students in school, in the training of home economics teachers, in extension work in the home. Let us remember that "to have babies and to save them" is not enough; they must be trained to worthwhileness from infancy on. There ought to be many a university sufficiently awake to its opportunities and its duties to parenthood to build a structure dedicated to this work. Within its walls there should gather, during the school months, children ranging in age from a few months to three or four years. At other times this group would be augmented by those from six to ten or more years. Directing it would be a well trained woman who knows child needs from various angles; and associated with her those prepared to tend and to train, to care for and to educate these children. Students from kindergarten and home economics departments should do some student service there; parents will gather for training for duties which life thrusts upon them, but about which education thus far has left them singularly unenlightened. The writer saw the beginnings of such a group on the University of Chicago campus this summer. It was housed in an old gymnasium building. The University carried no responsibility in connection with it. The members of the faculty and the students having children carried on the work in a coöperative way.

The Universities of Washington and Utah are offering a one hour credit course in child study work for parents. The University of Minnesota planned to give a course to home economics students but the necessary funds were not available. May the time be speeded when laboratories of infancy and childhood shall become as prominent on college and university campuses as are women's and men's buildings and libraries today.

EDITORIAL

Training for Motherhood. Mrs. William Lowell Putnam, as President of the American Association for the Study and Prevention of Infant Mortality, in her address at the annual meeting of the Association in Chicago, urged as vigorously as could one of our own number the need of training girls in homemaking. She said:

Into few businesses in life are people expected to enter with such a complete lack of training as that of motherhood—perhaps the most complicated business that exists. Men have evolved colleges and elaborated them into universities to give themselves the training which they need for their various forms of work, and women in entering the learned professions have very properly taken this education to fit themselves for their practice. Nurses are given a very careful and prolonged training—somewhat unduly prolonged for the benefit of the hospitals, perhaps, but an excellent training, fitted for its purpose. But when it comes to motherhood what training have we, we upon whom depends the whole future of those lives which come into being through us? Nothing at all. We do not even give our girls training for the common calling of homemaker, which happily falls to the lot of most women, for really a woman has to make a home wherever she is, and I have an idea that only a woman can make it. . . . I am not advocating doing away with the higher education of women—far from it—I believe in all the education we can get. I want not less but more of it, but if we must omit some things to make room for homemaking, I would cut out some of the things that are more remote from the children's daily life. I do not believe, however, that anything essential need be omitted. . . . I wish that during the coming year we might take up and push to a satisfactory conclusion this matter of the teaching of girls of all grades the principles of homemaking.

It is worth while to know that work we have thought belonged particularly to our own Association is so urgently pressed by another society whose aims are more specialized. On every side we meet the cry that if the children of the nation are to be properly born and nourished and trained the coming generation of mothers must enter upon their duties without the handicap of ignorance and inefficiency.

As an Association that has the welfare of the home as its first concern we must rejoice whenever new forces are joined to our own.

The Journal's New Dress. The JOURNAL, like other people, sometimes finds a reason for appearing in a new gown. When an old friend, accustomed to wearing the same garb year after year, suddenly changes it, one does not always like it, and may even resent the innovation. Lest this should happen, though we hope you will like the new better than the old, may we explain, with two good reasons?

Though the new cover was planned when the War Industries Board asked to have the weight of paper in all magazines reduced, and the lighter weight paper was not to be had in the color we were using, it was adopted partly because it costs a little less than the old—and the JOURNAL has been using every effort to survive the high cost of living without raising its subscription price.

For sometime the advertisers have been complaining that the JOURNAL dress was too dark to show up well the ornaments they wished to place upon it. So as the JOURNAL, like other magazines, is more or less dependent on their good will, it is happy to concede to their wishes, especially when it can do so to its own advantage.

Erratum. In the last number of the JOURNAL, page 566, line 18, "antineuritic" vitamine should read "antiscorbutic" vitamine.

COMMENT AND DISCUSSION

A HINT TO THE TEACHER OF COOKING

One of the vexing problems of the teacher, especially in classes in the grades, is the getting all of the utensils back into the desks in order, without confusion and with as little loss of time as possible.

If you have not found a satisfactory plan, see whether this will help.

Have black numbers stamped on the shelves and a corresponding number on the utensil that will be so placed as to cover the number on the shelf. Children will readily see where each article belongs, and will also detect at once any missing spoon or plate, since the number would remain uncovered.

This simple scheme will help both the teacher and the student, and it can easily be worked out with little expense of money or energy.

HELEN C. SHAW,
Champaign, Ill.

THE QUESTION BOX

Question: During a course in home economics, taken some time ago, we were taught that the water in which potatoes were cooked should be discarded, because it contained some substance injurious to the system. Lately, recipes that call for "potato water" have been published from departments of home economics. Have recent experiments shown that the formerly held theory is untenable?

Answer: The water in which potatoes are cooked contains no toxic substance. On the contrary, especially if the potatoes have been pared, it contains much valuable material, such as inorganic salts, soluble proteins and carbohydrates, and a considerable proportion of the water-soluble vitamines; it should not be discarded, especially during a period of food shortage when there is danger of an insufficient amount of these being present in the diet.

References: The Biological Efficiency of the Potato Nitrogen. Cooper, L. F., and Rose, M. S. *Jour. Biol. Chem.*, 30, 1917, 201. The Dietary Properties of the Potato. McCollum, E. V., Simmonds, N., and Parsons, N. T. *Jour. Biol. Chem.*, 36, 1918, 197.

Question: Is there any real reason why tea should not be taken with fish, more than with eggs, etc.?

Answer: The very curious notion that tea and coffee should not be taken with certain types of foods, for example, fish, eggs, meat and milk, is undoubtedly the result of observations regarding the effect of tannic acid on proteins. Tannic acid precipitates proteins. Tea and coffee both contain tannic acid, therefore, it is reasoned, tea and coffee should not be taken with foods containing proteins, namely, fish, eggs, etc. Well made tea and coffee contain comparatively little tannic acid, in fact no more than is found in some natural foods; the amount is too little to interfere materially with digestion. But if one persists in drinking very strong and poorly made tea and coffee, it would probably be better to take these with some form of protein, and thus distribute the ill effects of the tannic acid; otherwise all the tannic acid will be free to act on the proteins of the gastric juice and thus interfere with its activity.

Question: Does coffee form a chemical combination with the cream or milk added to it? Is there any real reason for the popular preference for pouring the hot coffee into the cream rather than vice versa? Is coffee into which milk has been cooked any more healthful than that made with water? Why?

Answer: Coffee contains varying amounts of tannic acid depending in part upon the coffee and in part upon the way in which the coffee is made. A strong coffee boiled for some time contains appreciable amounts of tannic acid. The addition of milk to this would form a chemical union between the proteins of the milk and the tannic acid, the amount depending upon the relation of the tannic acid and the milk. Under normal conditions the amount of tannic acid in coffee is comparatively little.

The reason for adding the coffee to the cream is that by so doing the cream or milk will be more evenly distributed. The agitation caused by pouring the coffee on the cream decreases the amount of stirring necessary.

Coffee made with milk is not more healthful than coffee served with an equal amount of milk. A cup of coffee has no value as food aside from the cream or milk and sugar served with it. Coffee made with milk would consist very largely of milk. In France the same end is attained by serving café au lait.

Question: It has been stated that cotton seed meal has been found to contain certain toxins. Is this true? What are they? Is there any danger in its use by children and pregnant women? If so, why? Please give an analysis of cotton seed with regard to its content of foodstuffs.

Answer: It is still a disputed question whether the cotton seed kernel contains a toxic substance, or whether the failure of animals to grow on it is not due to the fact that the food is distasteful and too little is eaten. After the cotton seed had been heated with steam, under suitable conditions, animals ate freely and grew normally. Similarly, animals fed cotton seed meal and cotton seed flour products, from which the oil has been largely removed by processes involving the use of a sufficient amount of heat, grew normally. Experiments with the meal and flour give no indication that either are injurious as human food, but these are still inconclusive. In the processes of refining, the toxic substances, or those substances which prevent rats from eating freely, may be removed from the cotton seed. The percentage composition of the cotton seed flour as given by Richardson and Green is: protein, 51.19; fat, 11.40; crude fiber, 3.05; nitrogen-free extract, 22.22; water, 6.14; ash, 6.

References: Osborne and Mendel. *Jour. Biol. Chem.*, 1917, 29, p. 289; Richardson and Green. *Jour. Biol. Chem.*, 1916, 25, p. 307, and 1917, 30, p. 243.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

The Elements of the Science of Nutrition.
By GRAHAM LUSK. Third Edition.
Philadelphia and London: W. B. Saunders
Co., 1917, pp. 641. \$4.50 + postage for
4 lbs.

It is very illuminating to compare the old and new editions of this book and to note thus the remarkable development of the subject of nutrition in the last eight years. This, the third edition (1917) has half again as many pages as the second (1908), twenty-one instead of fifteen chapters, and innumerable changes and additions in the treatment of almost every topic. "The aim of the book remains the same,—to review the scientific substratum upon which rests present-day knowledge of nutrition both in health and disease."

The new discussions are too numerous to be listed. Especially valuable are those on energy requirement. They include the recent work in Boston on infants, and on adults during starvation and during various kinds of activity, and the work at the Russell Sage Institute of Pathology at Bellevue Hospital on young boys and also on patients with typhoid, thyroid, or other diseases. DuBois' chart of the basal metabolism of human males from birth to the eighty-fifth year is included with its striking emphasis on the high metabolism of adolescent boys. The varying energy requirement of the human body from babyhood to old age has come to be capable of exact expression to a degree never before approached.

More light has also been thrown upon the chemical processes within the body. This

shows our "mental penetration into the biochemical reactions in the organism." Lusk can now discuss in surprising detail the intermediary metabolism of proteins, fats, and carbohydrates, and can give more or less definite information on the fate of 16 individual amino acids—and the apparent complication here really leads to clearer knowledge and clearer sight of research still to be done.

A new chapter, The Nutritive Value of Various Materials Used as Foods, takes up vitamins briefly; a few pages on ash constituents is added to the chapter on A Normal Diet; and considerable new work is introduced into that on Food Requirement During the Period of Growth. The last chapter is on Food Economics.

A surprising number of the questions propounded in the earlier editions are answered in this; for example, whether the energy evoked by the specific dynamic action of the food-stuffs can be utilized in the production of mechanical work. Since it cannot, Lusk draws the prompt conclusion that "a high protein dietary is therefore contraindicated in athletic contests, especially when the weather is hot and humid."

The value of this book to workers in nutrition can hardly be overstated. For the young student only parts of it are simple enough; but for the more advanced classes and for research workers it gives a wealth of scientific information and stimulating discussion which can be found nowhere else.

KATHARINE BLUNT.

Sewing and Textiles. By ANNABELL TURNER. New York: Appleton and Company, 1918, pp. 246. \$1.75. By mail of the Journal, \$1.88.

This textbook is valuable because of its view point. Prepared for rural and grade teachers it may do much to formulate definite aims in clothing work and to dispel many ideas that the first eagerly received books so thoroughly established.

The following are some specific statements illustrating the point of view from which the subject is treated.

The pages on child psychology show the importance of the application of psychology to sewing problems, "The teacher who understands the physical and mental development of the child will not require fine work before the fifth grade."

Habit formation is one of the greatest concerns of the grade teacher. The author rightly places on the teacher the responsibility of the success or failure of each normal child in sewing. "Poor work means, in most cases, that the teacher has not taught the correct method and insisted on high standards or that the problems are too difficult for the child."

The value of group work is stated thus: "The constant making of things for themselves has a tendency to make children selfish. Working together on things which may be used in the school or given to some worthy cause is splendid training for any child." The dressing of dolls for children's hospitals as suggested should, however, be questioned. Owing to their size, doll's clothes are too difficult for beginners to make.

Hard and fast rules are often insisted on in sewing, without reason. Many teachers, for instance, require that the selvedge always be removed irrespective of type of material, width of selvedge, or constructive process involved. "Experiment has shown that a good selvedge may often be used in making a neat flat finish."

While habit formation, not speed, is the first aim in beginning sewing, the desire to make legitimate short cuts should always be

encouraged. "Much time is wasted by basting when pinning would be sufficient." Yet "When teaching beginners it is well to have them baste, since the practice in spacing is excellent training." It should also be added that the long and short basting affords an opportunity for the analysis of the running stitch which is at the very basis of proper manipulation in most constructive processes.

The Chapter, "Use and Care of the Sewing Machine," includes many points of value which are not included in the textbooks on the market and makes hand sewing secondary to machine sewing. "Sufficient hand-work may be given in connection with the machine garments to afford the practice which will give the necessary skill in hand sewing. It is reasonable to teach the girls while in school the methods which they must and should use later on. Most of them will be busy housekeepers. It therefore seems unfair to require hours and hours to be spent sewing up long seams by hand. If you cannot persuade the school board to buy a machine, you might borrow or rent one the first year until you can demonstrate that the results warrant the expenditure. If you cannot buy, beg, or borrow a machine, allow the children to stitch the long seams at home."

Unlike most books on sewing, this one gives special attention to darning and patching. While the author opposes sampler work, patching is first done on practice material in order to keep the problem uniform. Pupils are then to be encouraged to mend their own worn garments and bring them to the teacher for inspection and suggestions. "In many cases mending and darning can be done on the sewing machine and while teaching other methods we must also include this as a time saver."

This idea of saving time is also dwelt on at length in the chapter on "Laundry Problems." It is "easy on many farms to make use of the gasoline engine in running a washing machine, wringer, and mangle with just as great saving to the housewife as to the farmer when it pumps water for the stock or grinds feed."

Sometimes one questions why the author does not always give the correct method of work, if this book is to help teachers, instead of simply stating that the "point must be carefully watched to avoid the formation of a bad habit." "Knots are used only when they can be concealed," is another point open to question. Give this direction to children and everywhere in seams, hems, and bands huge boulders of various sizes and shapes will be anything but concealed.

For one project directions are given for a flannel petticoat, with a full skirt on a band.

How many children wear this type? Then, too, under Hygiene of Clothing this statement is made, "Children's clothing should hang from the shoulders." Is the flannel petticoat, mentioned above, consistent with the last statement?

However, since the main value of the book is the point of view rather than suggested projects, the application of principles can be worked out by individual teachers according to their particular needs.

LILLIS KNAPPENBERGER,
Iowa State College.

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- The Business of the Household.* C. W. Taber. (Home Manuals. Edited by B. R. Andrews.) Philadelphia: J. B. Lippincott Company, 1918, pp. 438. \$2.00.
- Camouflage Cookery.* Helen Watkeys Moore. New York: Duffield and Company. 1918, pp. 106. \$1.00.
- The Effect of Diet on Endurance.* Irving Fisher. New Haven: Yale University Press, 1918, pp. 55. \$0.60.
- Home and Community Hygiene.* Jean Broadhurst. (Home Manuals. Edited by B. R. Andrews.) Philadelphia: J. B. Lippincott Company, 1918, pp. 428. \$2.00.
- More Recipes for Fifty.* Frances Lowe Smith. Boston: Whitcomb and Barrows, 1918, pp. 225. \$1.50.
- The Newer Knowledge of Nutrition.* E. V. McCollum. New York: The Macmillan Company, 1918, pp. 199. \$1.50.
- The Study of Fabrics.* Annabell Turner. New York: D. Appleton and Company, 1918, pp. 206. \$1.75.

PAMPHLETS RECEIVED

- Issued by the U. S. Department of Labor, Children's Bureau:
- Infant Mortality.* Estelle B. Hunter. Infant Mortality Series No. 7, Bureau Publication No. 29.
- Juvenile Delinquency in Rural New York.* Kate Holladay Claghorn. Dependent, Defective, and Delinquent Classes Series No. 4, Bureau Publication No. 32.
- Scholarships for Children.* Children's Year Leaflet No. 9, Bureau Publication No. 51.
- Suggestions to Local Committees for the Back-to-School Drive.* Children's Year Leaflet No. 8, Bureau Publication No. 50.
- Issued by the U. S. Department of Agriculture:
- A Preliminary Study of the Bleaching of Oats with Sulphur Dioxid.* George H. Baston. Bulletin No. 725.
- Women's Rural Organizations and Their Activities.* Anne M. Evans. Bulletin No. 719.

Issued by the U. S. Food Administration:

Hearty Lishes for 100. Suitable for Hotels, Boarding Houses, Institutions.

Save Food. Food Conservation Program for the American People. Bul. 17.

Sugar for the Common Table.

Issued by the United States Public Health Service:

Development of County Health Work. K. E. Miller. Reprint No. 470 from the Public Health Reports.

The Dietary Deficiency of Cereal Foods with Reference to their content in "Antineuritic Vitamine;" The Growth-Promoting Properties of Foods Derived from Corn and Wheat; Phosphorus as an Indicator of the "Vitamine" Content of Corn and Wheat Products. Carl Voegtlin and C. N. Myers. Reprint No. 471 from the Public Health Reports. How Industrial Fatigue May Be Reduced. Reprint No. 482 from the Public Health Reports.

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Issued by the Federal Board for Vocational Education:

The Home Project as a Phase of Vocational Agricultural Education. Bulletin No. 21, Agricultural Series No. 3.

Part-Time Trade and Industrial Education. Bulletin No. 19, Trade and Industrial Series No. 3.

Trade and Industrial Education, Organisation and Administration. Bulletin No. 17, Trade and Industrial Education Series No. 1.

Issued by the College of Industrial Arts, Denton, Texas:

Suggested Clothing for the High School Girl. Departments of Fine Arts and Textiles and Clothing.

Menus and Recipes for 1918. Lillian Peek, Department of Extension, (Reprint.) College Bulletin No. 65.

Issued by the Michigan Agricultural College, East Lansing:

Meat Substitutes. Prepared by the Home Economics Extension Division.

Methods of Cooking Potatoes. Prepared by the Home Economics Extension Division.

Extension Course Notes: No. 11, Food Values; No. 12, Milk; No. 13, Eggs; No. 14, Market Classes and Grades of Meat; No. 15, Vegetable Foods; No. 16, Rules for Planning the Family Dietary.

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Child Conservation Number, The Commonwealth. Vol. 5, Nos. 9 and 10, Monthly Bulletin, Massachusetts State Department of Health.

Child Welfare Work in Oregon. W. H. Slingerland, Ph.D. July Bulletin, Extension Division, University of Oregon, 1918.

Food Conservation to Help Win the War. M. Minerva Lawrence. Bulletin No. 1756, University of Texas.

Vocational Education in the Light of the World War. John Dewey. Bulletin No. 4, January, 1918, of The Vocational Educational Association of the Middle West, 1225 Sedgwick St., Chicago, Ill.

Woman in the War. A Bibliography. Marion R. Nims. Field Division, Council of National Defense, Washington, D. C.

Your Health and How to Defend it. Loula Esdale Kennedy. Kansas State Agricultural College Bulletin, Vol. II, No. 11.

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Preliminary Report on the Use of Vegetable Milk. H. D. Chapin, *Archives of Pediatrics* 35 (1918), No. 6, p. 365.

The Relative Morbidity of Breast and Bottle Fed Babies. H. M. McClanahan, *Archives of Pediatrics*, 35 (1918), No. 6, p. 372.

The Disadvantages of Low Fat Percentages. A. F. Hand, *Archives of Pediatrics*, 35 (1918), No. 6, p. 373.

Educational Value and Opportunities of Baby Health Stations. J. Sobel, *Archives of Pediatrics*, 35 (1918), No. 8, p. 468.

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The Role of Antiscorbutics in Our Dietary. Alfred F. Hess, *Jour. Amer. Med. Assn.*, 71 (1918), No. 12, p. 941.

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The Civilian War Ration. Paul Roth, *Jour. Amer. Med. Assn.*, 71 (1918), No. 12, p. 952.

Botulism: A Method of Isolating *Bacillus Botulinus* from Infected Materials. Ernest C. Dickson and Georgina E. Burke, A.M., *Jour. Amer. Med. Assn.*, 71 (1918), No. 7, p. 518.

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Dehydration as a Means of Economic Food Preservation. Wm. E. Fitch, *Amer. Med.*, June, 1918, p. 340.

Dietetics in the Hospital and its Relation to Other Departments. Lulu Graves, *Amer. Med.*, June, 1918, p. 345.

Diet after Forty. Adam Wright. *Amer. Med.*, June, 1918, p. 355.

Diet in Disease of the Skin. Wm. Cunningham, *Amer. Med.*, June, 1918, p. 374.

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NEWS FROM THE FIELD

The American Home Economics Association will meet in connection with the N. E. A. Division of Superintendence, Chicago, Illinois, February 28 and March 1, at 9.30 a.m. and 2 p.m. each day, in Recital Hall, Auditorium Hotel.

The program will include addresses by national leaders who are aiding in the Government plans for Thrift Education, Americanization Education, Health Education, and Education for Rural Life, movements intimately related to home economics problems, and for which home economics women will be asked to lend their assistance and coöperation.

There will be round table discussions of special questions relating to public school home economics work upon which home economics teachers should take a united stand, such as time allowance for classes, class scheduling, school luncheons, and content of courses. Methods of coördinating the various agencies now concerned in teaching phases of home making will also be considered.

The Council meeting will be held at 8 p.m. Thursday, February 27, at the Congress Hotel. The Congress Hotel will be headquarters.

Reservations should be made immediately.

Announcement is made of the **Ellen H. Richards Memorial Fellowship**, offered jointly by the Trustees of the Memorial Fund and the University of Chicago. The fellowship carries a stipend of \$500 and tuition fees at the University of Chicago for the year 1919-20. Candidates should be able to present evidence of graduate work already done in some field of Home Economics. Applications may be sent before April 1, 1919, to the Dean of the Graduate Schools, University of Chicago, Chicago, Ill.

The trustees of the **Ellen H. Richards Memorial Fund** announce that this year a second graduate scholarship will be available through the joint action of the Trustees and Teachers College. This will carry \$400 in cash and a year's tuition in the institution. It is open only to college graduates. Detailed information may be obtained from the Secretary of Teachers College, Columbia University.

The National Society for Vocational Education will hold its annual meeting at St. Louis, Thursday to Saturday, February 20 to 22, 1919, just before the meeting of the Division of Superintendence of the N. E. A. in Chicago. The general sessions are of unusual interest at this time of industrial and educational reconstruction, but of particular importance to those in the home economics world are the two sectional meetings on Vocational Homemaking, on the afternoons of the 20th and 21st.

The meeting will bring together many of the workers under the Smith-Hughes Act, and it is hoped that there will be a large representation of home economics workers generally. Miss Isabel Ely Lord, vice-president of the N. S. V. E. for home economics, is chairman of the Committee on Vocational Homemaking, which has a large membership and an executive committee whose membership includes Miss Anna Cooley, Miss Helen Hildreth, Miss Maude Murchie, Miss Grace Schermerhorn, and (ex officio as on the general Executive Committee to represent home economics) Miss Charlotte Ebbets. A strong program is being planned, including a round table discussion of some of the most pressing problems of this work.

The headquarters will probably be the Hotel Statler, but detailed information can be had from the office of the N. S. V. E., 140 West 42nd Street, New York City.

The National Dairy Show held its twelfth annual exhibit October 10 to 19 at Columbus, Ohio. The program was a great departure from that of former years. While the first and most obvious purpose was, of course, the promotion of the dairy interests, in addition to this and under the leadership of the Food Administration, the U. S. Department of Agriculture, Children's Bureau, The Ohio State College of Agriculture, and local welfare organizations, the Dairy Show enlisted in the national educational welfare campaign, special emphasis being placed upon child welfare.

The work of the government and allied agencies divided itself into two phases—the one which was concerned with teaching a greater appreciation of milk and milk products in the dietary of the nation and the other which concerned itself with child welfare in general. The presentation of the subject matter was through lectures, charts, prepared dietaries for school children, bulletins, card index to publications bearing on the subjects, and demonstrations in the preparation of food from milk and milk products. The food work was in charge of home economics women of the United States Department of Agriculture and Ohio State University; child welfare came under the supervision of representatives from the Children's Bureau and local organizations.

Throughout the entire session the relation of the dairy industry to successful homes was made apparent. The feeding of the child is the vital thing of America today. This means primarily milk. In an address before the Conference, Dr. McCollum said, "Milk is our greatest protective food and its use must be increased rather than diminished. The liberal use of milk has made us what we are. No family has the right to purchase any meat until each member has at least a pint of milk daily and this I regard as below the optimum. Milk is just as necessary for the maintenance of health in the adult as in the young."

The entire exhibit was designed to be edu-

cational. It appealed to both the producing dairymen and to the consuming public. Too much praise can not be given to those who participated in the conception and carrying out of the program of this excellent welfare session of the Twelfth National Dairy Show.

The Baltimore Home Economics Association had its initial meeting in November, 1918, in connection with the yearly conference of the teachers of the State, the gathering of fifty being made up mainly of teachers of home economics, demonstrators under the Extension Division of the Maryland State College of Agriculture, and dietitians from hospitals and other institutions. It was decided that the time had come when a permanent association was needed.

At the second meeting, the committee on organization presented a constitution for adoption and nominated officers. The officers as elected were: President, Mrs. Mary H. Abel; Vice President, Miss Helen T. Parsons; Treasurer, Miss Marjory Wills; Secretary Miss Winifred Alvather; Members-at-large of Executive Committee, Miss Alice C. Walton, Dr. Ruth Wheeler, Mrs. Agnes O'Dea, Dr. Lelia Powers, Miss Florence Powdermaker. The above officers make up the Executive Committee, and meet monthly for the transaction of business preceding the regular meetings.

At the first meeting of the Executive Committee the following standing committees were appointed: Membership, Program, Relations to the Public Schools, to Dietitians and Social Workers, and to Women's Organizations in the City.

The January meeting was held at the time of the meeting of the Association of American Agricultural Colleges and Experiment Stations, and the large gathering listened to short addresses from the following guests: Miss Abby L. Marlatt, Miss Isabel Bevier, Miss Edna N. White, Miss Alice Ravenhill, Dr. C. F. Langworthy, and Professor E. V. McCollum.

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JEWISH DIETARY PROBLEMS

MARY L. SCHAPIRO

New York City alone has two hundred and seventy-five thousand Jewish children in its public schools. One has but to remember this to be convinced that home economics teachers of the Jewish districts are confronted with a difficult task. Yet after two years study on the East Side of New York City, visiting the schools, school lunch rooms, Jewish philanthropic institutions, and a great many typical Jewish homes, I have come to the conclusion that the difficulty arises from ignorance which an adequate background of information could in a large measure remove. This information groups itself naturally into two divisions, each dependent on the other. The first is a knowledge of the dietary laws by which all orthodox Jews live and which may not under any circumstances be violated without the risk of alienating the child. The second is a knowledge of the characteristic Jewish food habits, good and bad. Both of these factors should be used in the application of the principles of nutrition and cookery.

While the following list of dietary laws is not exhaustive, it covers all those that are now regarded as essential.

Prohibition of Animal Foods. Absolute and partial prohibitions:

Unclean animals are absolutely prohibited. Their offspring is also prohibited, so also is that which comes out of either. "Clean animals are all quadrupeds that chew the cud and also divide the hoof." All others are regarded as not clean. The swine, weasel, mouse, four kinds of lizards and the chameleon are distinctly listed as unclean.

Products of animals that are suffering from some malady or that have died a natural death or had eaten poison are regarded as "terefah" and may not be used.

"All animal food which is not obtained by killing in the *prescribed manner* and after adequate inspection by a duly authorized official may not be used."

Blood was regarded by the ancient Hebrews, and is by many primitive peoples today, as the vital part of the animal which must be given back to God. Fish does not come under this category, possibly because it is a cold-blooded animal.

"Fish that have fins and scales—none other—may be eaten." This would bar all shell fish such as oysters, or lobsters, as well as fish of the eel variety. There seems to have been some good dietetic reason for this, as the Eastern waters were doubtless often polluted and there may have been cases of poisoning resulting from the mistaking of poisonous water snakes for eels.

No scavengers or birds of prey are to be eaten. These are regarded as unclean.

Roe of unclean fish is forbidden.

The suet of ox, sheep, or goat is forbidden (not the fat). Fat of birds or permitted wild animals is not forbidden.

An egg yolk with a drop of blood on it is considered as an embryo chick and is forbidden.

The following partial prohibitions are fully as important as the above:

"After the proper cut of meat is secured from the proper kind of animal which has been slaughtered in accordance with Jewish Law, it is to be soaked half an hour to soften the fibre and enable the juice to escape more readily when salted. (The pan used for this purpose may not be used for anything else.) The meat is then thoroughly salted, placed on a board which is either perforated or fluted, and placed in an oblique position so as to enable the blood to drain off. It is allowed to remain thus for one hour, after which time it is to be washed three times. The washing is for the purpose of removing all the salt. This process is called 'Kashern,' " and is regarded as very important.

"Meat left for three days or more unsoaked and unsalted may be used only for broiling."

"Bones with no meat and fat adhering to them must be soaked separately and during the salting should not be placed near the meat."

"The liver must be prepared apart from the meat. It is not kashered as is meat, but cut across in two directions, washed, salted and broiled over an open fire. When seared on all sides water is poured over it to remove the blood. It may then be used as is kashered meat, for the

heat is supposed to have removed all the blood. Chops and small steaks are treated in the same way."

"Chops and steaks may be broiled as above."

"The heart may be used but must be cut open lengthwise and the tip removed before soaking. This enables the blood to flow out more freely. Lungs are treated as is heart. Milt must have veins removed. The head and feet may be kashered with the hair or skin adhering to them. The head must have the brain removed. This latter, if used, must be kashered separately."

"To kasher fat for clarifying remove the skin and proceed as with meat."

"In preparing poultry it must be drawn and the insides removed before putting into the water. The claws must be cut off before kashering. The head must be cut off. The skin of the neck must be either turned back or cut so that the vein lying between two tendons may be removed. This extends all the way to the back. At the back of the neck its two branches must be removed."

"Eggs found in poultry with or without shells, must be soaked and when salted placed on the board in such a spot that the meat does not drain upon them. Such eggs may not be eaten with milk foods."

Hindquarters are forbidden because of the fact that "when Jacob wrestled with the angel the patriarch was lamed."

While the last prohibition is observed in this country, I am told by a rabbi that this is not the case everywhere. The Biblical provision permits the use of hindquarters if properly porged. The packing-houses, however, find that the hindquarters bring too high a price in the non-Jewish market to warrant their bothering with the porging.

"Seething a kid in its mother's milk is forbidden."

This is the origin of the prohibition against the cooking of meat and milk together or of the eating of such mixtures. This rule is rigidly adhered to and in its present application necessitates the use of a complete double equipment of dishes, and utensils. Since this rule is regarded as one of the most important, one can understand why such sauces as butter sauces are refused at meals with meat. This rule occasions the home economics teacher considerable trouble in planning menus.

"Meat and fish should not be cooked or eaten together, for such a mixture is supposed to cause leprosy. The mouth has to be washed after eating fish and before meat may be eaten."

In addition to the above regular daily restrictions there are the periodic restrictions that the teacher should know.

Sabbath: No food may be cooked on the Sabbath. This means that all the cooking for both days is done on Friday. This need has led to the development of foods such as Sabbath Kugel or Sholend, Petshai, and many others.

Passover: During Passover week no leavened bread or its product, or anything which may have touched leavened bread may be used. This restriction holds for eight days. In every Jewish home a complete and most thorough system of cleaning precedes this holiday. No corner escapes a scrubbing and scouring, lest a particle of leaven, or what is just as bad, a particle of food which may have touched leavened bread, should be found. A complete new set of dishes is in use during the week. Cutlery, silver, or metal pots may be used during this holiday if properly kashered or sterilized. The usual method of doing this is to plunge red hot coals into boiling water and then to immerse the desired utensils. These or any other Passover utensils may be used after the holiday is over without re-kashering, but once used without Passover precautions they are unfit for Passover use unless re-kashered. In actual practice this means that in every orthodox Jewish household there are four sets of dishes—the usual set for meat and the set for milk food, in addition to duplicate Passover sets. The Passover dishes are stored away very carefully lest some leaven come near them.

Because of the need for abstaining from leavened bread during Passover, many interesting dishes have developed such as the Mazzah Klos (dumplings) soup, cakes and puddings made of the mazzah meal. Almond pudding and cake are very popular. Almost all of the food cooked during this holiday requires the liberal use of shortening or fat, with great danger of a too liberal use for health, as well as from the economic point of view. The fat generally used is either goose or chicken dripping, or clarified beef fat other than suet. This is prepared as early as Hannuka (Feast of Lights), occurring in the middle of December. The drippings are generally savory and very fine.

Fast Days: a. Yom Kippur (The Day of Atonement). No food or drink may be had for twenty-four hours. b. Fast of Esther. This precedes the Feast of Purim and is now observed only by the very pious. The feast is universally observed.

Semi-Fast Days: Eight days in Ab—For nine days no meat food may be eaten by the orthodox. Since this comes in the heat of the summer it must have been a rather welcome restriction dietetically.

"The many dietary and ceremonial laws to which orthodox Jews conform," says a writer in the Jewish Encyclopedia, "have naturally evolved a particular kind of culinary art."

The wanderings of the Children of Israel since Bible times has considerably added to their skill as cooks and has modified and varied their tastes. It has made Jewish cookery international. For example, from Spain and Portugal comes the fondness of the modern Jew for olives and the use of oil as a frying medium. The sour and sweet stewing of meats and vegetables comes from Germany. The love of pickles, cucumbers, and herrings comes from Holland, so also does the fondness for butter cakes and bolas (grain rolls). From Poland the Jewish immigrant has brought the knowledge of the use of Lokschen or Fremsel soup (cooked with goose drippings), also stuffed and stewed fish of various kinds. From Russia comes Kasha, made of barley or grits or cereal of some sort which is eaten instead of a vegetable with meat gravy. Blintzes are turnovers made of a poured batter and filled with preserves, or cheese, and used as a dessert. Sholent, sometimes called Kugel, are puddings of many kinds, such as Magan, Lokschen, Farfil. Zimes, or compotes of plums, prunes, carrots, and sweet potatoes, turnips and prunes, parsnips and prunes, and prunes and onions, are all puddings, and come from Russia. Zimes of apples, pears, figs, and prunes are southern Roumanian, Galician and Lithuanian as well.

Here is a list of some of the most characteristically Jewish dishes.

Soups are the great standby of the poor. Krupnick is a term used for cereal soups made of a cereal like oatmeal, with potatoes and fat. When the family can afford it meat or milk is added as the case may be. This is the staple food of the "Yeshibot" (schools to which Jewish boys are sent to be instructed in Rabbinical lore.) When there is neither meat nor milk in the soup it is called "Soup mit nisht." This really is "Supper mit nichts."

Borsht is a form of soup. It is made of either cabbage or beet-root and russel (juice derived from the beet). This is made by the addition of meat, bones, onions, raisins, citric acid, sugar, and sometimes tomatoes. Eggs are added just before serving to whiten it. This is called "farweissen."

Gehakte Herring is really a salad made of chopped boned herring, with hard cooked eggs, onions, apples, pepper, and a little vinegar and sugar. It is used as an appetizer in the form of a canape.

Sabbath Kugel or Sholend is a dish of meat, peas, and beans, sometimes barley or potatoes as well, which is placed in the oven before Sabbath and which is usually eaten hot on the Sabbath. This dish is sometimes also called a Shalet. Those who call this dish a Shalet or Sholend usually mean pudding when they speak of Kugel. These three terms are used interchangeably by different people.

Petshai or Drelies, characteristic of South Russia, Galicia, and Roumania, is a calves' foot jelly made at home. (Commercial gelatin is prohibited.) The calves feet are cleaned by first singeing off the hair. They are then kashered and stewed with onions and seasonings of salt and pepper. Like the Sabbath Kugel, this is placed in the oven the day before and is ready hot by Sabbath noon. What is left is freed from bone, has hard cooked eggs and vinegar added, and is allowed to congeal. This forms a sort of aspic which is served cold in the later afternoon.

Strudel is a single layered jelly or fruit cake and takes the place of pie as a dessert. It is usually rolled. The dough is as thin as tissue paper.

Teigachz is a pudding sometimes called Kugel or Sholend and may be made of rice, noodles, farfil, or even mashed potatoes. These usually have some drippings, eggs, and flavorings added.

Gebrattens is pot roast and is usually accompanied by Kasha, though it is often served with potatoes which have been cooked with the pot roast. These are really stewed to a golden brown. Onions are always an important ingredient.

Almond Pudding is a favorite because it requires neither meat nor butter and can therefore be eaten at either type of meal. It is made of almonds, eggs, sugar, cinnamon, and lemon rind, and baked.

The obstacles to the use of meat have developed a taste for fish, as well as for cheese and milk products. Since fish is not a warm-blooded animal it may be eaten in conjunction with milk and milk products. This is an added reason for its popularity. The celebration of the Sabbath and the eating of fish have always been associated. The author already alluded to says that "from no orthodox table is fish absent at one or more of the Sabbath meals, however difficult it may be to procure." In inland countries like Poland the Jews are limited to fresh water fish. I have known people, who could barely afford bread during the week, to pay as much as forty or even fifty cents per pound for their Sabbath fish. Salmon is a favorite kind of fish. "This is

fried, white stewed, or brown stewed." Smoked salmon, pickled herrings, and pickled pickerels are served as appetizers by the Russian Jews. Most characteristic of all the fish dishes, perhaps, is the "gefilte fish," for which carp, white fish, and pike are most generally used. Part of the flesh of the fish is removed and chopped with onions, bread crumbs, seasonings, and egg. The mixture is returned to the fish which is then cooked or stewed with more onion and a large amount of pepper for several hours at a low temperature. The long slow cooking develops the flavor of the different kinds of fish which blend and form a most palatable dish. While Jewish fish dishes form excellent appetizers, or even entrees, I do not think they are desirable as the main dish of the meal, because of the high seasoning. For this reason they are particularly bad for children, and the home economics teacher has a real missionary task to perform in creating a taste for less highly seasoned food.

The dietary restrictions on the use of butter and meat at the same meal limit the use of vegetables. Jewish people are therefore not as fond of them as they ought to be for their own physical well being. One form in which vegetables may appear at the same meal with meat is with a sweet and sour sauce,—a brown sauce to which citric acid, or vinegar, and sugar have been added. If this is well made it is good, but the making of sauces is always an art. Stewed fruits are almost unknown. Preserves and wonderful preserves are plentiful. Plain stewed fruit has its nearest approach in the zimes, but as a rule these are really rich enough to be a conserve. While this might do in small quantities as a dessert it would not do as a breakfast fruit. Fruit does not appear at breakfast as much as it should.

Some of the limitations of the diet, when unchanged by instruction, are evident. It is inadequately balanced, over-rich, and over-seasoned. These facts make it imperative that the domestic science instruction should be of such a nature that the children will feel its value, yet there are reports of the teaching of the use of lard in bread and pastry lessons. I have personally not found such a blunder in any of the schools that I have visited. Usually a neutral vegetable fat was used. Instruction in the schools should aim at correcting some of the dietary defects. This is only possible when the teacher has the child's complete confidence, and this, as everyone knows, can never be gained when religious scruples are violated.

The schools are not alone in facing this problem. All social welfare workers have met it.

At the time when this investigation was made it was found that the Jewish charitable and philanthropic institutions observing religious restrictions generally made an attempt to furnish an adequately balanced diet. Some succeeded excellently, balancing their day's rations by the liberal use of milk and fruit. In others, however, particularly in some poorer day nurseries, conditions were far from satisfactory for the health and growth of the little ones under their jurisdiction. For example, tea, coffee, or milk, instead of only milk, were offered by the investigated places. That tea and coffee should be offered at all to children under eight years of age seems pitiful; that tea and coffee should be put in the same class with milk is wrong. In nearly all of the menus meat appears every day. Cereal and fresh fruit and vegetables do not appear in most of these institutions as often as they should. In many cases they are so seldom used as to make their absence stand out as one of the striking defects of the diet.

The difficulties of cultivating a taste for the simpler foods are strikingly illustrated by an experiment extending over a period of eleven weeks, an experiment which demonstrated at the same time that the problem is capable of solution, even with grown-ups. During the summer of 1917 about one hundred and twenty-five girls spent two weeks on an average in a vacation house. On their arrival nearly all the girls looked pale, anaemic, and half starved. In an incredibly short time the rest and good air coupled with the delightful surroundings gave them perfectly enormous appetites. Apparently they could eat everything, yet the first introduction of vegetables with bland sauces of any sort usually furnished a left over problem. The girls simply refused to eat them regardless of their hunger. The same vegetables served as stews, ragouts, casseroles, or pot-pies, well seasoned, were relished. If these vegetables were served as salads with mayonnaise dressing they remained untouched. The only exceptions were as a rule those girls who had already begun to break away from this part of the faith and to eat "grass" in restaurants. When these vegetables were served with a sharp French dressing they were favorites. However, even by the end of the short period of two weeks many of the girls expressed a decided preference for the stewed fruit over the compote, and considered the creamed vegetables "eatable."

I had great difficulty in getting the girls to eat the breakfast cereal, yet they ate all kinds of cereals in soups. Except for rice pudding, really a sort of cake as it is made, the possibilities of cereals are not at all worked out. It is needless to suggest to the home economics teacher the value of cereals in the diet, and the fact that their use ought to be stressed. As to the remedies, the answer is difficult. Certainly one ought not to turn one's back on the problem. In addition to a knowledge of the food which the Jewish people eat and relish it is necessary to have an understanding of its valuable features as well as of its shortcomings. With this background one should teach the application of the principles of nutrition and cookery to their own diet, pointing out the places where modifications are necessary. Modifications are important, as even the children are likely to prefer the highly seasoned to the bland foods. Modification of the dietary tastes of a people is, of course, a slow and oftentimes thankless task, but when one realizes the evils attending the constant irritation which the high seasoning produces, one cannot help the desire to undertake it.

At the outset it is well to remember if one is to make any progress, (1) that the Jewish women are as a whole good cooks, and (2) that because of the long slow cooking to which their food is subjected it is as a rule easily assimilated. Thus the problem is not to get them to adopt American cooking but to modify their own style of cooking so as to eliminate its harmful features while preserving its beneficial qualities,

One must not forget that while the diet of the poorer Jews is a somewhat narrow one, it is one which yields a greater return for the amount of money and energy put into it than does that of the poorer American; for they have the secret of making a little go a great way. There are dozens of ways in which the Jewish housewife utilizes a little fresh meat. But, on the other hand, she does not as a rule use leftovers. This is because she seems to feel that since the meat is generally part of the main meal of the day, to use the same bit of food in the same form twice in succession would be unattractive and, not having ingenuity enough to change its form, she discards it. Here is a chance for conservation work along the line of teaching attractive ways of using leftover cooked food.

Our real problem is therefore first to discover just how to make them see the need for an adequately balanced diet, and second, how to make them follow it. All people, but especially the Jewish people, need to

have their attention called to the fact that unless they make a conscientious effort their diet is likely to be deficient in mineral matter. Although Jewish people are fond of milk it is generally regarded as a luxury, and as the need for economizing becomes greater their milk bills tend to become smaller. This is something, under all circumstances, to be guarded against, but is an especially serious matter in the case of a people who eat so few vegetables. As among the poor of all peoples, there seems to be a tendency to substitute tea and coffee for milk as the beverage of children. Emphasis on milk is of real value.

Teaching the conservation of wheat, meat, sugar, and fat has not been difficult, for it is interesting to note that the Jewish people are naturally more fond of rye than of wheat bread, and barley, oats, and buckwheat have always been used. They have also always known how to serve a little meat attractively, and meat is eaten only once a day. Pork, of course, is never touched. Jewish housewives have long known how to use honey, molasses, and syrup in place of sugar. Sugar is a luxury in the countries from which they come.

Lessons in cooking might very profitably include: (a) Many ways of using fish as substitutes for meat. (b) Many ways of using nut and legume dishes. Peas, beans, lentils and rice need to be picked over carefully before using lest a spoilt particle be used. (c) Variations of cream sauces (which are not liked), such, for example, as a cream custard sauce, which is much liked, or cream sauce containing cheese with extra seasonings. Tomato sauce and its variations such as creole and Spanish. (d) Cream soups. (e) Cereals—for breakfast, as soups and as desserts. All cereals must be tested as follows before using. "Place them on a hot plate. If no worms or other insects appear they are fit to be eaten; if not fit they must be thrown away. If flour is mildewed it must be destroyed." (f) Stewed fruits and vegetables, fresh and canned. (g) Salads and salad dressings for fruit and vegetables. (h) Use of leftovers.

In using the following menus it should be borne in mind that tea and coffee are not for children. They should have milk. Neither have I planned that the little ones have the more highly flavored foods. They should have cereals. In planning these menus I have had in mind at least one pint of milk per day for every adult, and one quart for every child. These menus are only suggestive; they probably could not be followed by the very poor and probably would not be literally followed by the very rich.

My efforts were directed toward (1) supplying an adequately balanced diet; (2) one which will be so like that to which the Jews are accustomed that it will be liked. I might state that these menus, with but few changes, were in actual use in the experiment above referred to and that the girls showed an average gain of from $2\frac{1}{2}$ to 3 pounds per week for the two weeks that they remained.

MENUS FOR TEN DAYS

Breakfast

Sunday: Sliced bananas, oatmeal, sugar and milk, toast, coffee.

Monday: Stewed prunes, hominy, sugar and milk, rye biscuits, cocoa.

Tuesday: Stewed dried apple sauce, corn meal mush, sugar and milk, cereal muffins, coffee.

Wednesday: Oranges, corn flakes, sugar and milk, toast, coffee.

Thursday: Stewed dried peaches, oatmeal, sugar and milk, rye rolls, coffee.

Friday: Stewed fresh apples and apricots, fried corn meal and syrup (oatmeal for children), cereal muffins, coffee.

Saturday: Stewed rhubarb, corn flakes, cold fried fish, bread and butter, coffee.

Sunday: Raisins and figs, hominy, sugar and milk, corn muffins, coffee.

Monday: Stewed peaches, rice and raisins, sugar and milk, corn dodgers, coffee.

Tuesday: Stewed prunes and bananas, corn meal mush, sugar and milk, rice muffins.

Luncheon

Sunday (dinner at noon): Noodle soup, chicken fricassee, rice, string beans, sweet-sour sauce, pineapple and apricot ice.

Monday: Cream of pea soup, herring and boiled potatoes, corn bread, butter, French pancake.

Tuesday: Spanish rice, vegetable salad, Boston brown bread, almond blanc mange, fruit sauce.

Wednesday: Japanese eggs, sliced tomato salad, gingerbread, coffee.

Thursday: Salmon salad, baked potatoes, raisin cake, cocoa.

Friday: Fried tile fish, creamed potatoes, cold slaw, layer cake, ice tea.

Saturday (dinner at noon): Cold gefillte fish, noodle soup, Sabbath sholend (beans, peas, barley), lettuce and cucumber salad, prune and onion zimes or carrot and sweet potato zimes, cookies, tea.

Sunday (dinner at noon): Vegetable soup, roast beef, Franconia potatoes, asparagus, white sauce (made without milk), lemon ice.

Monday: Sour cream and cheese, baked potatoes, radishes, Indian pudding, tea.

Tuesday: Cod fish cakes, peas in cream sauce, sliced tomato salad, dried apricot or date marmalade, cookies, tea.

Dinner

Sunday (supper): Combination salad (lettuce, scallions, cucumbers, and tomatoes with sour cream), boiled potatoes, rye bread and butter, war cake, coffee.

Monday: Barley and mushroom soup (dried mushrooms preferred), scalloped chicken with rice and tomatoes, lettuce and asparagus salad, French dressing, cookies, tea.

Tuesday: Corn soup, kidney bean stew, spinach, dressed lettuce, peach short cake (no cream).

Wednesday: Split pea soup, pot roast, grated raw potato pancakes, pickles, rice pudding, strawberry sauce (no milk or cream).

Thursday: Vegetable soup, baked fish, scalloped potatoes, egg plant salad, hominy pudding, fruit sauce.

Friday: Chicken soup with noodles, gefillte fish, roast chicken, dressed lettuce, carrot and sweet potato zimes, strudel, tea.

Saturday (supper): Fried fish, cold petshai, cake, tea.

Sunday (supper): Baked noodles and cheese (cottage), vegetable salad, graham cookies, apple sauce, coffee.

Monday: Sorrel soup, chartreuse, tomato sauce, fried egg plant, sliced fresh fruit.

Tuesday: (Oaten) hafer gritz and potato soup, pea loaf served with carrots in cream sauce, cabbage sweet and sour, apple fritters, tea.

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Cookery; Cruelty to animals; Dietary Laws; Dembo, author of Jewish Method of Slaughter; Drinking vessels; Eggs; Fasts; Fat; Fish; Food; Fruit; Grace at meals; Kasher; Korabka; Mazzah; Meat Tax; Melihah; Salting of meat; Milk; Passover; Porging; Poultry; Shehitah; Swine; Terefah; Vegetarianism; Wiener, Adolph. (An article on the Dietary Laws, by a Rabbi. Published after his death.)

There are a number of Jewish cook books on the market. Most of them are merely a collection of recipes, many of them taken from other books, and adapted to meet the Jewish requirements. I have gotten hold of the following, and there may be others:

The Manual of Jewish and Modern Cookery, by "A Lady;" "With valuable recipes and hints relating to the toilette." Published in 1846.

The Jewish Cookery Book on Principles of Economy. "Adapted for Jewish Housekeepers" by Esther Levy.

Continental Dishes for English Tables, with an appendix on Jewish Cookery, by G. J. Guinteau.

Aunt Babettes Cook Book.

International Jewish Cook Book, by Florence Kreisler Greenbaum.

Economical Jewish Cookery. Dainty Dinners and Dishes for Jewish Families, by Mary Henry, and Kate Halfer. Published in 1897.

Modern Orthodox Recipe Book.

Jewish Cookery Book, by Miss Tattersall, London.

THE SILVER LINING OF OUR CONSERVATION CLOUD¹

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When the United States entered the world war in April, 1917, it was evident that not only many of our industrial and commercial pursuits would be seriously affected thereby but our personal and individual habits as well. If we were to send large armies of men to already hungry Europe some organization must be effected by which we could help feed both. An inventory must be taken of our food supplies on hand and suggestions for increased production and wiser and more intelligent consumption made to the general public.

¹ Presented at the Texas Home Economics Association meeting in Dallas, November 29, 1918.

President Wilson's appointment of a food administrator who was a trained executive, a man acquainted with scientific method and at the same time possessed of a magnanimous spirit, has been more than justified. Petty jealousies have had no place in the food program. Scientific men have been consulted in their various fields of specialization, scientific surveys have been insisted upon as a basis for any new and seemingly drastic recommendations. The leading home economics experts and nutrition specialists have been called to counsel and the food "dictator" has served as a sort of clearing house for all the information thus accumulated. One of his aims has been to bring all the men and women who deal with food problems in trade in close contact with the scientist and nutrition specialist in order that each may understand the other's point of view, in order that they may work harmoniously with the one great end in view—feeding the world.

The individual housekeeper was led to realize that she must help and that she needed advice. Never before had her own settlement of culinary problems been so difficult, and adjustment seemed beyond her. To whom could she turn for advice in adjusting herself and family to the new situation without endangering health or efficiency?

To the home economics teacher the silver lining of the cloud revealed itself. The food conservation campaign was playing directly into her hands. The tremendous impetus of necessity created by the war made it possible for her to reach, by a quick drive, the goal toward which she had been patiently working. The hedge between the school and the home was torn down. Every market basket and larder was opened to the home economics expert. It was never so easy to assemble an audience to consider home problems—an audience which would sit for hours earnestly seeking the guidance of the expert in solving her knotty food problems, and incidentally other home problems almost as important.

Food conservation measures have not only saved certain staple foods for our allies but have worked a revolution of lasting importance in the daily food habits of our own nation. No group of people is better able to realize the need of such a revolution than a group of home economics teachers. Habits have been thrown out the window—an accomplishment Mark Twain said was impossible. In many instances at the present time certain foods are appreciated for flavor, whereas before the war they were appreciated for sweetness only. I feel safe in making the statement that the populace is better fed than ever before because such

fundamental facts as the importance of milk and succulent vegetables and fruits in the diet have been emphasized from the beginning of the campaign. Diseases due to faulty diet—diet either deficient in certain essential elements or containing a super-abundance of certain elements—are bound to decrease, although, so far as I know, there are no figures with which to confirm this statement. More attention is being paid to the daily menu, the school lunch, and the proper feeding of children, and all of this is destined to lower the per cent of the physically unfit. Many ungrounded prejudices against certain foods have been broken down and appetites have been educated to the master's degree on the part of certain individuals of my acquaintance. Foods which prior to the war were looked upon with cold disregard now occupy a prominent place on the weekly menu.

The new recipes sent out have taken better methods of preparation directly into the home. The demonstrations which have been held in practically every community have enabled experts to emphasize more approved methods along with the use of substitute foods. We have accomplished many things with ease under the new régime which in normal times would have been difficult to approach and which probably never could have been universally popularized.

Giving has become a habit. We have found a peculiar satisfaction in realizing that in giving of our means we were helping the great armies of the world to victory. We have found the same satisfaction in sharing our bread and butter with those who were fighting our battles. Education for service—the keynote of modern education—is an ideal which has taken rapid strides during the past four years. The conservation measures have contributed appreciably to the furtherance of this ideal. They have helped also in the shaping of a public opinion which will demand a more practical trend in the courses offered in schools toward solving the fundamental problems of man in relation to society. If we are alert to our rare opportunities we shall find means of keeping alive in the students a sense of responsibility to the community—which in its broad sense means the world. The crook in the cane is toward us.

I find housekeepers intensely interested when I talk to them about the three meals a day in terms of food values and body needs. When I tell them something of the needs of the child of six months, the boy of eight years, and the girl of twelve years it never fails to bring a gratifying response from the audience and oftentimes from the source least expected. Mothers are becoming alarmed at the staggering figures on

infant mortality, particularly among the artificially fed babies. The home economics teacher has unusual opportunities to make capital of such interest and organize part-time classes for housekeepers; classes which will consider the real home problems that their members bring to them. But she must appreciate her responsibility along with her opportunities and give out only information based upon the most scientific research. Food quacks are almost as dangerous as quack doctors and I am afraid there are many of them afloat.

The tardy response of men in meeting the food conservation regulations was surely based upon lack of information, and is a strong argument for the introduction into our school curriculum of some such general course as will acquaint them with food values as well as other fundamental problems of the home. Could we not somewhere provide this general course calling it "The Business of the Household" or some other general and suitable name—and open it to both boys and girls? This course could be made not only interesting but eminently worth while because it would be meeting an outstanding need. The methods of the Food Administration would help in popularizing such a course.

The food conservation campaign has brought about a sorting and sifting of our courses of study in home economics of an altogether wholesome sort. World concepts have played an important part in this process. As the searchlight has been turned upon our courses some of them have been found adequate while others have been found wanting in many respects. First things have of necessity been placed first while many hampering details have been relegated to the background. Home economics has occupied a more dignified place in the curriculum. Schools and colleges not previously teaching home economics have introduced courses that will often remain; others will introduce work as soon as possible, and in the course of events this subject may be regarded as essential to every school program as reading, writing, and arithmetic.

As the curtain has been lifted and we have been allowed to look out upon the world food situation, surely no home economics teacher has failed to see avenues toward improvement in her methods of teaching. No teacher can have clung to the old notebook method of teaching whereby the gleanings from college are dealt out to gullible students when much more reliable information could be acquired from the new and up-to-date books which should be in use by every home economics

teacher, to say nothing of the real problems afforded by every day living.

The teacher who is only technically skilled is not the teacher who is sought today to fill positions in our schools, but rather the one who is professionally trained and whose course of study and experience has been sufficiently broad to enable her to see her subject in its true proportion to other subjects in the curriculum, and who is able to apply educational theory in her practice to the same high degree that is demanded of the best teachers in other departments of the school. The conservation campaign has weighed the teacher in the balance. Has she been able to adapt herself to the new situation? If not she is not worthy of her position, and should seek other work that she can do better.

When the real returns from the conservation campaign come in, I believe we shall see that instruction has been simplified and made less formal and cumbersome, and that there has grown up an appreciation of what makes the atmosphere of a real home. More should be done, however. Instead of much of the information still "poured into students" they should be given the attitude of mind which will enable them to get the information for themselves and adapt it to their own needs. Our library shelves are conspicuously lacking in informational books. Teacher after teacher whom I have visited has answered the question as to reference books and magazines with: "Yes, we have two or three cook books and Hutchinson's Food and Dietetics, but no magazines." What can we expect in the way of results with this paucity of reference material? There are many good books and magazines which should be found on every home economics library shelf for the background of information and the vocabulary which will render the student at least conversant with the subject she is supposed to be studying.

We have as a group allowed ourselves to drift away from real home problems. Schools problems have not carried over to the home simply because they did not fit in. Menus and recipes, for example, have often been too time consuming to render them practical for home use, and too much adjustment has been necessary on the part of the student to have them carry over. Consequently much time has been lost. The conservation regulations have taught us that every day meals should receive much more attention. I would not underestimate the value of the formal meals which are generally considered a part of every girl's course in foods and cookery, but often they are given to the neglect of

well-balanced, well-cooked, and properly served daily meals, a fact to be deplored. I believe thoroughly that every home economics teacher should spend some time in a real home each year carrying on the activities of the home which the average girl she is teaching will be responsible for later on in life, and that this experience should, in so far as possible, be in the community in which the girl lives or at least in the state. A step of this kind, I believe, would result in a measurable gain in the effectiveness of our teaching.

Through three summers personal experience in such practice I have found myself appreciating the housekeeper's point of view more and more. One summer I set aside a week which I called my efficiency week and attempted to reduce to a minimum time-schedule the preparation and serving of food, and the dishwashing for a family of five. When the food conservation campaign was launched and I was privileged to lecture on the subject to groups of women in the state of Texas I found this experience as valuable an asset as any food study course I had had, excepting only my nutrition courses. I appreciated to a more sympathetic degree the distribution of time, and the necessity of reducing the conservation dish to its simplest form if I expected it to carry over.

Now that peace has come, let us realize that our work is just beginning. The lump has been leavened. Shall we complete the loaf or allow the leaven to spend itself and subside leaving the lump in its last state worse than its first? Let us grasp the opportunity to further democracy in the school and see to it that every man, woman, and child is given the opportunity to gain some knowledge of foods, especially as related to health, and an appreciation of the other fundamental problems of the home.

As the searchlight is turned upon us let us not be discouraged but see the silver lining of the cloud, accept the facts which confront us, and with firm determination put new vigor into our home economics work which will be time-fast, and will lead into paths of greater service—the service and confidence which will make all the activities of the home fairly “bristle with interest.” And let us remember “The field is white to the harvest.”

FACTORS INFLUENCING THE AMOUNT OF INVERT SUGAR
IN FONDANT

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Good fondant is a creamy mass of sugar of such a consistency that it may be easily molded. It should be so finely grained that no crystals can be felt when a small portion is rubbed between the fingers or between the tongue and the roof of the mouth. When a thin layer is held toward the light, no separate crystals should be visible. A microscopic examination shows many tiny crystals.

Success in making fondant consists in completely dissolving the sugar, boiling the resulting syrup until a certain density is reached, and then controlling conditions so that recrystallization takes place with the formation of tiny crystals. Although typical fondant may be made from sugar and water, there is less danger of failure if a small amount of either glucose or acid (usually cream of tartar) is added, the purpose of the acid being to produce some invert sugar, which, like the glucose, interferes with the formation of large crystals. When water alone is used, the ratio of water to sugar is often larger than when either glucose or acid is added, for it is generally believed that the water acting over a longer period of time at the high temperatures produces an appreciable amount of inversion. Some danger attends the use of acids, for a too large amount, or a small amount acting over a too long period, may result in an excess of invert sugar and thus prevent the crystallization of the sucrose. Definite proportions of acid, sugar, and water have therefore been formulated, which under certain conditions produce satisfactory results.

It has been observed that when water, sugar, and acid are used the same degree of success is not always attained in the various sections of the country. For example, fondant made in Massachusetts is less likely to "grain" than that made by the same formula in Wisconsin or Colorado. The different results have been attributed to atmospheric conditions, and in some cases, namely Colorado, to the difference in the time it takes the syrups to reach the boiling temperature. In a syrup which begins to boil at 94°C. there may be less inversion than in a syrup which begins to boil at 100°C., for not only does the acid act on the sugar for a shorter period, but the syrup reaches the desired density at a lower temperature.

This investigation was undertaken to determine the amount of invert sugar present in fondant prepared under various conditions. Samples of fondant were made according to the following general plan.

1. Different amounts of water were used with a constant amount of sugar.
2. Different amounts of water were used with constant amounts of sugar and acid.
3. Different amounts of acid were used with constant amounts of sugar and water.

The sugar mixtures consisting of cane sugar, either tap or distilled water, and commercial cream of tartar, when it was included, were cooked to a temperature of 113°C. in an open aluminum kettle. In order that the amount of heat might be as nearly uniform as possible in all the experiments, the kettle was placed a given distance from the cone of the flame furnished by a Bunsen burner. During the cooking the usual method of washing down the crystals adhering to the sides of the pan was omitted, since such a procedure would have changed the relation of water to sugar in the mixtures.

Before testing the samples of fondant were first dried, then pulverized, and dried again to constant weight. Varying amounts of the dried samples (from 0.01 to 0.2 gram, depending upon the amount of reducing sugar in the sample) were used in making the tests. In all cases duplicate fondant mixtures were prepared and duplicate determinations were made on each sample.

The amount of invert sugar was determined by means of the colorimetric method of Lewis and Benedict.¹ In using this method it was found necessary, in order to produce a solution with sufficient depth of color to match the standard solution, to use in some cases more of the fondant than would redissolve in the given amount of water after evaporation of the picric, sodium carbonate mixture. When this dried material was made up to standard (10 cc.), the slight cloud caused by the undissolved cane sugar interfered with the reading. This was filtered out before the solution was placed in the colorimetric tube.

A preliminary test showed that the cane sugar used contained a small amount of reducing sugar, 0.29 per cent. Since the purpose of the investigation was to determine the total amount of invert sugar in fondant, in the tables the reducing sugar in the cane sugar has been included in the estimates of the invert sugar.

¹ Lewis, R. C. and Benedict, S. R.: *Jour. Biol. Chem.*, 20, (1915), p. 61.

TABLE 1

Reducing sugars in fondants made with varying amounts of water

| NUMBER OF EXPERIMENT | CANE SUGAR | WATER | CREAM OF TARTAR | INVERT SUGAR | REACTION TO ALIZARINE SODIUM SULPHONATE |
|----------------------|------------|-------|-----------------|--------------|---|
| | grams | cc. | grams | per cent | |
| 1 | 110 | 55 | | 0.322 | Alkaline |
| 2 | 110 | 110 | | 0.322 | Alkaline |
| 3 | 110 | 220 | | 0.321 | Alkaline |
| 4 | 110 | 330 | | 0.322 | Alkaline |

TABLE 2

Reducing sugars in fondants made with varying amounts of water and constant amounts of acid

| SERIES | NUMBER OF EXPERIMENT | CANE SUGAR | WATER | CREAM OF TARTAR | INVERT SUGAR | REACTION TO ALIZARINE SODIUM SULPHONATE |
|--------|----------------------|------------|-------|-----------------|--------------|---|
| | | grams | cc. | grams | per cent | |
| A | 1* | 110 | 55 | 0.06† | 0.38 | Alkaline |
| | 2 | 110 | 110 | 0.06 | 0.36 | Alkaline |
| | 3 | 110 | 220 | 0.06 | 0.32 | Alkaline |
| | 4 | 110 | 330 | 0.06 | 0.32 | Alkaline |
| | 5 | 110 | 55‡ | 0.06 | 10.7 | Acid |
| B | 1 | 110 | 55 | 0.12 | 1.45 | Acid |
| | 2 | 110 | 110 | 0.12 | 1.29 | Acid |
| | 3 | 110 | 220 | 0.12 | 0.34 | Alkaline |
| | 4 | 110 | 330 | 0.12 | 0.38 | Alkaline |
| C | 1 | 110 | 55 | 0.18 | 4.31 | Acid |
| | 2 | 110 | 110 | 0.18 | 3.31 | Acid |
| | 3 | 110 | 220 | 0.18 | 0.34 | Alkaline |
| | 4 | 110 | 330 | 0.18 | 0.36 | Alkaline |

*The proportions frequently given for fondant are 5 cups of sugar, 2½ cups of water, and ½ teaspoonful of cream of tartar. In Table 2, experiments 1 and 5, one-tenth of these proportions was used.

†The acidity of 0.06 grams of cream of tartar was equivalent to 3.8 cc. N/10 HCL.

‡Distilled water instead of tap water was used.

TABLE 3

Reducing sugars in fondants made with varying amounts of acid and a constant amount of water

| NUMBER OF EXPERIMENT | CANE SUGAR | WATER | CREAM OF TARTAR | INVERT SUGAR | REACTION |
|----------------------|------------|-------|-----------------|--------------|----------|
| | grams | cc. | grams | per cent | |
| 1 | 110 | 110 | 0.12 | 1.26 | Acid |
| 2 | 110 | 110 | 0.18 | 3.29 | Acid |
| 3 | 110 | 110 | 0.24 | 4.34 | Acid |
| 4 | 110 | 110 | 0.60 | 8.46 | Acid |
| 5 | 110 | 110 | 1.20 | 16.85 | Acid |

TABLE 4

Reducing sugars in fondants made with small amounts of water and varying amounts of acid

| NUMBER OF EXPERIMENT | CANE SUGAR | WATER | CREAM OF TARTAR | INVERT SUGAR | REACTION |
|-------------------------|--------------|------------|-----------------|-----------------|----------|
| | <i>grams</i> | <i>cc.</i> | <i>grams</i> | <i>per cent</i> | |
| 1 | 110 | 55 | 0.06 | 0.38 | Alkaline |
| 2 | 110 | 55 | 0.12 | 1.45 | Acid |
| 3 | 110 | 55 | 0.18 | 4.31 | Acid |
| 4 | 110 | 55 | 0.24 | 7.45 | Acid |
| 5 | 110 | 55 | 0.30 | 9.96 | Acid |

The amounts of the various materials used and the results obtained have been summarized in the foregoing tables.

The results recorded in table 1 where sugar and water only were used indicate that no appreciable amount of inversion takes place when water and sugar are boiled to a temperature of 113°C. The cane sugar used contained 0.29 per cent of reducing sugar, whereas in the fondant there was found to be approximately 0.32 per cent, a difference of 0.03 per cent which is within the limit of experimental error. Fondant made with larger proportions of water contained no more reducing sugar than that made with smaller amounts. Obviously in making fondant nothing is to be gained by using larger proportions of water when no acid is present.

In Table 2, series B. and C. constant amounts of sugar and acid (0.12 gm. and 0.18 gm., respectively) were used with varying amounts of water. Those fondants made with the smaller proportions of water contained appreciable amounts of reducing sugars. As the amount of water was increased the percentage of invert sugar decreased, until there was present an amount equivalent to that in series A, in which case much less acid was used, 0.06 gram, or in Table 1 where no acid was used. The explanation of these results is apparent when we compare the reactions of the various fondants and the amount of invert sugar present in the fondants (Table 3)) in which constant amounts of water were used with varying proportions of cream of tartar. All fondants reacting alkaline contained approximately the same amount of reducing sugar; fondants reacting acid contained different amounts of reducing sugars; when the water was constant, the per cent of invert sugar was proportional to the amount of acid added. The tap water used contained a hardness of 315 parts per million,—quite enough to neutralize the cream of tartar even when considerably more was used than is called for in standard recipes.

In order to determine the approximate percentage of invert sugar which might be expected to be present when soft water and cream of tartar are used, fondant was made with distilled water and the usual amount of cream of tartar (Table 2, Series A, 5). This fondant contained slightly more reducing sugar than was present in fondant made with the usual amount of tap water and five times the amount of cream of tartar generally considered sufficient (Table 4, 5).

The results of the investigation point to the following conclusions:

1. When sugar and water are boiled to a temperature of 113°C. no appreciable amount of inversion takes place. Increasing the amount of water and therefore lengthening the time of boiling does not influence the amount of reducing sugar in fondant.
2. Fondant made with sugar, water, and cream of tartar contains a variable amount of reducing sugars, depending upon the amount and character of the water. When distilled or soft water is used fondant may contain a considerable proportion (10 per cent) of invert sugar.
3. The alkalinity of even moderately hard water may be sufficient to neutralize the cream of tartar in standard recipes.
4. If cream of tartar is to be used in fondant making, there should be worked out for each locality definite proportions of sugar, water, and cream of tartar. These will vary in the different sections of the country, depending upon the degree of hardness of the water.
5. When hard water is used for making fondant the amount of water used for washing down the crystals which accumulate on the sides of the pan should be controlled.
6. More nearly constant results will be obtained in fondant if the glucose is added directly, rather than produced by the action of acid in the process of making the fondant.

Thrift is good management of the business of living.

THE CONTENT OF A COLLEGE COURSE ON CHILD WELFARE¹

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It has been well said that vital statistics are the bookkeeping of the community; for it is not until the registration of births, marriages, and deaths becomes nation wide and the time limits for such registration are rigidly enforced by law that reliable vital statistics become possible, or that the actual health condition of the population can be estimated. Though this country has not yet attained to this perfection of national bookkeeping, the partial information now available is of a character to stimulate efforts directed to the improvement of the national physique and to the prevention of much mortality and ill health, especially among the young and again during middle life. A great public service has been rendered by the Equitable Life Assurance Society in the publication and free circulation of its bulletin entitled "The War and The Trend of National Vitality," where unassailable evidence is given of the unpalatable fact that among civilized nations this is the only one in which the death rate is increasing above the age of 45, the causes being found in premature decline of resistance to organic disease. Between the last two census years, 1900 to 1910, the death rate from this group of causes increased 28 per cent in the population over the age of thirty, and there is no reason to believe this has in any way diminished since that date.

Among predisposing factors associated with this decline in national vitality is listed the tendency to overtax the nervous system throughout life. The heart, kidneys, and lungs, that is the organs themselves, would respond to all reasonable demands made upon their muscular and other tissues over a much longer period; but it appears that it is the controlling nervous system which is prematurely exhausted by unsatisfactory, but controllable, customs within and without the homes of the people. The reports of school medical officers indicate that already in grade and high schools signs of the overtaxation of the childrens' nervous systems are unduly prominent; and again their opinions are endorsed by the disquieting proportion of rejections among young

¹ Presented at the Eleventh Annual Meeting of the American Home Economics Association, Chicago, June, 1918.

men, chiefly of college age, called to serve in army and navy; young men still of an age to be the direct product of the homes of the nation.

Meanwhile, the Children's Bureau has furnished equally unassailable proofs of the distressing, yet chiefly preventable, loss of life during the pre-natal and immediately post-natal months, which annually impoverishes the population; and of the serious physical and mental results to the surviving children of prevalent infections, such as measles, whooping cough, or diphtheria; or of more widespread, though less recognized causes, such as defective feeding, insufficient sleep, precocious excitement, or premature labor.

To combat these serious menaces to national efficiency and to cultivate a health conscience in respect of the right rearing of human life during its years of helpless dependency, the National Council of Defense proclaimed a Children's Year and in conjunction with the Children's Bureau of the Department of Labor inaugurated a comprehensive campaign of public instruction in the right care of child life. Once initiated, however, this campaign must be continuous and progressive, till the inheritance and maintenance of sound health is assured to every individual in the population. To attain this objective, however, teachers must be carefully prepared and students thoroughly equipped with sound knowledge of the contributory factors or the requisite far reaching change of domestic and social habits will not be accomplished; for nothing less than a re-formation of much conventional opinion, nothing less than radical changes in many century old habits, will permit the attainment of the objects in view. And what are these objects?

1. *Efficiency*—personal, domestic, industrial, civic, and national; that is, such a preponderating proportion of a high quality of human material that the work of the world will be achieved with the minimum expenditure of energy, time, material, or health; and the human race itself will be freed from the domination of debility, disease, and premature death.

2. *Economy*—through the wiser and more judicious use of the great, responsible gift of life. Readers of the various reports prepared by medical health officers, medical school inspectors, visiting nurse organizations, antituberculosis societies, in addition to statistics published by the various Bureaus under the Federal Government, cannot but be alive to the appalling extravagance in respect of human life active at all ages; though, even when anxiety is aroused on this account, few realize how very far reaching, enduring, and costly to the majority who

survive are the results of conditions fatal to the minority. These results assume myriad forms of physical, and what is worse, mental disabilities, liable to handicap the individual throughout his life. Such extravagance can and must be checked and without inexcusable delay.

3. *Education of the public.* The population as a whole is still imbued with the faith that health is a purely personal concern, a possession to be abused or squandered at the whim of the owner. As a matter of fact each individual is answerable to the community for the contributions he makes to the welfare and prosperity of the nation; his value is to be estimated by his civic worth, not by his personal attainments. The new education will insist that the cultivation of health is a public duty and that preventable sickness is a dereliction of such duty.

Further, out of date fatalism, which accepts as inevitable premature death and preventable accidents or disease, must yield to the conviction that modern science makes man the master of conditions, not their slave; that all liberty and political rights carry with them responsibility for the intelligent utilization of the opportunities for progress. The fund of information now at our disposal upon the nature of mankind and the influence upon that nature of the nurture it receives removes any excuse for the perpetuation of conditions based upon ignorance, apathy, convention, or false standards of economy. The tools for reform are ready to hand, it remains only to acquire the skill needful for their utilization. These tools are almost exclusively those already employed in laying the foundation for the group of applied arts known as household or home economics; for household economics cannot be considered apart from a study of the characteristics and requirements of that form of life—the human—which it aims to benefit and protect.

When planning, therefore, the introduction of a course on the Care of Children into the schedule of our home economics students we find the foundation for this study already laid—biology, physiology, chemistry, physics, bacteriology, psychology, sociology, history, and economics, all serve as prerequisites equally for the one as for the other, *if*, and, I confess I lay great emphasis upon that *if*, attention be given in the study of anatomy and physiology to the marked differences in structure and relative proportions of the various systems of the body during the process of growth, and to the fact that physical growth, with the associated instability of growing tissues, is not complete till toward twenty-five years of age; for it is this long enduring condition of immaturity, it is this irregularity in the growth of parts, which renders the young

child so highly susceptible to infections, so ill-adapted to labor, so injuriously affected by faulty conditions of life, so incapable of adult capacity for self control.

Biological studies must extend also to include recent reliable eugenic findings. Please note the word "reliable;" though it is to be hoped that we have now passed beyond the very dangerous stage of premature generalizations. I attach great importance to forcible, though restrained, emphasis being laid upon the responsibilities of joint parenthood and the duty to future generations of a thoughtful selection of a co-partner in parenthood, which may well be illustrated from the records of eugenic research. Experience shows me that no better approach can be made to the study of maternal problems and precautions during the prenatal development of an infant than by tracing the phases of adolescence in girlhood, and giving a sketch of the unfolding of the new powers as well as of the process by which provision for maternity is first made and then kept active. The almost pathetic desire and appreciation of such instruction carries with it, to me, on each recurring occasion, a grievous reproach for our neglect to meet this natural demand for assistance in the past. Evidence that the spirit in which this information is received is purely wholesome, is found in the desire to bring older relatives to share it in these classes, and to prepare, as far as may be, to pass on the information with accuracy and judgment.

A good biological perspective is highly advantageous, because it links the physical characteristics and requirements of human life with their simpler manifestations in lowlier organisms; in the study of which the susceptibility to injury, warping, or death, in the early phases of existence, is more obvious and more emphasized than in human anatomy and physiology.

I attach importance also to a good historical perspective of the place of the child in human progress, which explains at least some of our present day problems, and illustrates vividly the results of ignorance upon the human stock.

When planning, therefore, a college course on The Care of Child Life, it is advisable to afford opportunities to link it up at many points with the previous study of biology, sociology, and history; for particularly at this present time I believe it to be impressive and stimulating to provide such a background for the students. It seems to dignify a subject with which it is falsely assumed every "true woman" is instinctively familiar.

In the next place, I hold it of primary importance to select instructors who will give prominence to normal phases of growth and development from conception to maturity, and to the rich potentialities inherent in human nature when unchecked by adverse conditions; who will select material illustrative of these aspects and possibilities, rather than divert attention to the study of the abnormal, defective, and delinquent. This study must find a place, but it should be subordinate to the other.

In the third place, the course should afford scope for practical demonstration, direct observation and, if possible, personal practice. For these purposes there should be good provision for illustrative material; a practice house, where the general care of a child's food and surroundings can be tried out as well as discussed; regular field work in day nursery or kindergarten, to gain familiarity in the handling of little children as well as opportunity to study temperaments and personal idiosyncrasies and last but not least a good reference library.

As regards subject matter, this at present would advisedly vary. The point of view of the organizer, the length of course, the preparation of students, and other factors must be taken into account. I have taught the subject for twenty years to many types of students and have worked out certain general principles for my own guidance; these with all diffidence I herewith submit, encouraged to do so only by the quite wonderful and enthusiastic interest these tentative efforts have aroused on the two continents where it has been my responsible privilege to make them.

If the course be short, say two periods a week for one quarter only, I organize the subject matter more or less as follows; for so far I hold the presentation of a comprehensive review to be as important, if not more so, than a few details.

(1) General characteristics and requirements of life, with special reference to young organisms; (2) Responsibilities of parenthood and the meaning of infancy; (3) Phases of prenatal development; (4) Special needs of infancy; (5) Peculiarities of physical organizations throughout childhood; (6) The mental organizations of a child; (7) Nutrition in childhood; (8) Nurture in childhood; (9) Predisposition and environment as factors in development; (10) How to study a child; (11) The preservation of health in children; (12) Adolescence and its problems.

If, on the other hand, three quarters are available for the course, I believe it should be introduced by a brief review of the biological history of the human race, and, if possible, a similar review of recent teach-

ings on racial influences, which lead on to a study of eugenic factors in human efficiency, and individual responsibility for future generations. This general introduction can, if preferred, be entrusted to a specialist in this subject matter. Parenthood—the relation of adolescent conditions and care to successful maternity, the prenatal and postnatal care of mother and infant is thus first presented in the light of its national importance, which at present calls for very definite emphasis; and the far reaching results of personal selfishness and indulgence may be clearly seen. A study of the phases of growth during childhood necessitates attention to important details of physiological and anatomical development, and must embrace the right care of the nervous system at different ages, opening up the unsuspected causes for the anxious increase of abnormalities and of premature death. The nurture of the child follows on fitly, covering as it does all the requirements for healthy growth of mind and body. This must be consistently linked up with the influences of environment, under which reference must again be made to the increase of juvenile delinquency in its numerous forms. The place of play and of physical education; the need for the careful cultivation of physical and moral habits, and for training in home duties, must be associated with these details of nurture and surroundings; and will in their turn open up the scope of home and school training and the necessary provision of sound sanitary conditions.

I have always found great interest aroused by brief digressions into the methods of great educators in relation to school hygiene, and into the history of child labor, of physical training, and of child hygiene. Such digressions are amply justified by the links they forge with the past, and the evidence they afford that the problems now confronting the civilized world are no new "fads," but serious menaces to human efficiency, hitherto unchecked from want of scientific assistance. The characteristics of adolescence must on no account be omitted; their study seems to prove most helpful to every one and is essential to the rounding up of the course.

Health—its importance and the conditions which ensure its conservation and maintenance—is the keynote of all my teaching: the causes which interfere with and destroy it must, of course, be passed in review, but I believe they should be assigned a subsidiary position, until we have fostered as vivid an interest in the normal as in the abnormal; until the morbid faith in the necessity for disease has given place to courageous active application of health principles. It is for the parents,

the teachers, the social workers, to preach and practice and preserve health, to prevent disease not to curb its ravages; so, while sufficiently informed to recognize the symptoms of unfortunately common ailments and while trained in all legitimate methods of prevention, the duty of health, the serious reflection on home methods if ill health prevail in a household, call, in my opinion, at this era for particular emphasis.

The control and ordering of domestic conditions to secure national prosperity and progress rest very largely in the hands of our women; the movement to include in their special preparation for this work the knowledge how to order to these ends the early stages of human life is of the greatest promise for the future of our race. To advance this future, if but one step, towards our goal was the motive which encouraged me to lay before you the fruits, however immature, of a long experience.

WHAT IT TAKES TO PRODUCE MILK

One of the most attractive exhibits of the Dairy Division, United States Department of Agriculture, at the National Dairy Show, was one in which a good Holstein cow was shown standing in a modern stall. Behind her was a calf in a small pen, and a large bottle ten feet high representing 6915 pounds of milk, a little over 3200 quarts, the amount of milk produced in one year by a good Holstein cow well fed.

Adjoining this was a stack of hay representing the 2632 pounds required to feed the cow one year. Sacks of other feeds represented 1152 pounds of purchased feed such as cotton-seed meal or oil meal, besides the home-grown feeds such as corn, 843 pounds. Dairy cows in the northern part of the United States have to be sheltered from three to five months in the year and bedding is required to keep them clean; so in neat piles there were 720 pounds of straw bedding.

The whole exhibit visualized to the visitor the amount of milk a good cow will produce and the amount of feed it takes to enable her to live a year and produce this large amount of milk.

The figures on which this exhibit was based were obtained from investigations carried on in one of the prominent dairy regions of Indiana. Feeding practices there are typical of those largely followed in the great dairy sections of the nation.

FOR THE HOMEMAKER

THE FARM BUREAU AND HOME DEMONSTRATION WORK¹

C. B. SMITH

United States Department of Agriculture

The Farm Bureau is a relatively new national institution. It is an institution promoted by the extension forces of the Federal Department of Agriculture and the State Agricultural Colleges for the purpose of more effectively promoting efficiency in agriculture and home economics through extension work. Up to July 1917 there were possibly not more than 300 Farm Bureaus in the entire United States although there were at that time approximately 1000 county agents in as many counties and probably 400 Home Demonstration Agents. At this time (June 1918) the number of Farm Bureaus in the United States has increased to about 1200. At the same time there are approximately 2500 counties organized with county agents, 1200 of which also have home demonstration agents.

Not every county therefore which has a county agent or a home demonstration agent is necessarily a Farm Bureau County.

What then is a Farm Bureau?

Our first Farm Bureau, in the northern states, consisted of simply a county agent with an office room and with salary and expenses paid by a Chamber of Commerce or other business interests, who solicited the work, with the Department of Agriculture coöperating. The College of Agriculture of the state furnished good will and advice. This agent at the outset was to study local agricultural conditions and put on the forms of demonstration work that seemed to be needed.

The farmers and their wives were not consulted in this plan, the College of Agriculture put no money into it, and assumed no responsibility for it, and the Federal Department of Agriculture paid only part of the bill. Later the Chamber of Commerce in order, as it believed,

¹Presented at the Eleventh Annual Meeting of the American Home Economics Association, Chicago, June, 1918.

the better to promote good feeling between rural and urban interests made arrangements for farm membership in the Chamber of Commerce, and the activities of the county agent employed were supposed to be directed by this farmer membership working through an agricultural committee.

This type of Farm Bureau organization with minor modifications and often with county financial support was adopted during the period 1911-1913 in more than 100 counties in the northern and western states.

Not only was the Bureau headed up largely in the Chamber of Commerce or by business interests, but the plan of work seemed to be built on the idea of helping the farmer rather than teaching the farmer to help himself. Farm women were not recognized in the organization.

While the fundamental idea back of the Farm Bureau—viz., the employment of a well trained agricultural agent to work with the farmers in the improvement of agriculture gained support quite generally throughout the entire United States, there was a fly or two in the ointment. The farmers themselves did not seem to snuggle up to the plan as they apparently should and were expected to do. There was not much open opposition but the response of the rank and file of the farmers was not hearty. They were inclined to sit back and watch the business man teach them how to farm. In some rural counties where the farmers were given an opportunity to vote on the proposition, it did not carry.

Meanwhile increased appropriations to the United States Department of Agriculture and the enactment of the Smith-Lever Law providing extension funds to each of the State Agricultural Colleges enabled the Department and the Colleges to increase the amount of extension funds put into the Farm Bureau enterprise and to assume a larger responsibility in directing the work. The need for divorcing the work from business interests or even the appearance of commercial influence became increasingly apparent. If the Farm Bureau was to receive the full support of the people for whom it was previously designed, it must be organized and officered by the farmers themselves. Business interests might aid the work but farm interests should lead and direct.

Toward the close of the year 1916 and at the beginning of 1917 a little money became available to the Federal Department and State Colleges of Agriculture of the Northern and Western States for the employment of a woman agent to work with rural women in extension work on the same general plan as the work of the county agent was carried on with men.

This brought in new problems as to just what this woman's work should be—who should direct it; what part the women of the county should take in the matter; whether or not it should be regarded as a part of the work of the Farm Bureau; what the relations of the woman agent should be to the county agent.

These questions were being leisurely discussed and worked out when in April, 1917, war was declared with Germany and in the following August some four million dollars were appropriated by Congress for the immediate expansion of our county agent system to practically every county of the United States and for the expansion of woman's work to approximately half the counties of the country and all of the more important cities.

At that time there were about 500 county agents in the northern and western states, and something like 15 women agents, most of them recently appointed. In the South there were about 700 county agents and 350 or 400 women agents but only a very limited development of Farm Bureaus. In the northern and western states about 800 new counties were to be organized for the support of men's work, and the women's work was to be expanded to about 600 counties.

The organization of so large a number of counties in so short a period of time made it imperative that a standard method of organization be employed.

These factors seemed to stand out most clearly in county organization and extension work: Development is from within out. Strength comes from doing things yourself. The farmer himself is best able to study his own business, redirect his own work and develop his own institutions. He must assume responsibility. Women's work must be recognized. Local financial support must be obtained.

A new point of view with reference to extension work as a whole had been slowly evolving, somewhat as follows:

The agricultural colleges with their experiment stations are research institutions. The Federal Department of Agriculture is a research institution. The farmers of the country fostered the movement that created both of these institutions. The farmers created these institutions because they wanted to avail themselves of the benefits of research work in agriculture, home economics, and rural problems.

These research institutions have justified the farmer's expectation of their value. They have discovered many helps to agriculture and the farm home. There is every reason to believe that they will continue

to discover important facts in agriculture and that they will always have messages to take to farmers—in agronomy, in animal husbandry, in dairying, in soil management, in home economics, and like matters.

The trouble has been how to get these messages effectively to every farm home. The bulletin, the report, the lecture, the press have all been helpful means, but they have not fully sufficed. The expense involved prohibits these institutions from personally carrying the message to the last man on his own farm. Some form of local organization is needed to do this—a kind of organization that can take any message from anywhere, in either the art or the science of agriculture or home economics, and transmit it into effective application on every farm in every rural community everywhere. Such an organization competent to render such a service is our present conception of a Farm Bureau.

In its physical make-up, it is a county wide organization with a Farm Bureau President, Vice-President, Secretary, and Treasurer; a county-wide executive committee consisting of these officers and five or six additional members each of which is chairman of a county-wide committee in charge of a line of work; local committees in every community of the county; and a membership of 500–1200 men and women definitely identified with rural life.

Such an organization must be permanent because the College of Agriculture and the Department of Agriculture are permanent, and these institutions of the farmer will always have agricultural and home matters of importance to extend based on their research work. The local agriculture, which is mobile and changing, needs constant study if the best practices are to be maintained constantly by all the community.

The Farm Bureau may or may not employ a county agent, a home demonstration agent, or a boys' and girls' club agent. It may employ any one, none, all three, or more, though it is encouraged to employ all three if funds are available.

The big work of the Farm Bureau centers around the development of an agricultural and home program of work for the county as a whole and for each individual community as well. This program of work is decided upon at an annual meeting of all the Farm Bureau members. The men guided in part by the county agent lead in the development of the agricultural program of work. The women guided in part by the home demonstration agent lead in the development of the program of work for the home. When the members of the Farm Bureau have thus decided for themselves what they want to stress in the way of agricul-

ture and home economics a committee headed up by a member of the executive committee aided by a community committee man in each community of the county that wants to put the work on is put in charge of the work and it is up to that committee to find demonstrators, take charge of the field meetings, when held, assemble the results of the demonstrations and make a final report on the work.

The men and women members sitting together, voting together, determine upon the entire county program. They together determine whether or not to coöperate with the State College of Agriculture and Federal Department of Agriculture in the employment of a county agent, a home demonstration agent, or a club leader. These coöperatively employed agents if chosen become essentially technical advisers to county and community committeemen. It is their business each in his respective field to see that the whole machinery is kept trued up and maintained in efficient working order. Their big job is to see that each county or community committeeman is thoroughly informed as regards the work such committeeman or local leader is to do, and that they extend that information to everyone in the community needing it.

The Farm Bureau is not strong on the social side. It is fundamentally a business organization. Its purpose is to get better agricultural and home economics practices established in the lives of the people. Where the county agent has been called upon to furnish suggestions and take considerable part in social meetings his time has been so absorbed week days, nights, and Sundays that his real work of aiding farmers in the improvement of their agriculture has been weakened. The probability of this proving true in home demonstration work needs to be carefully considered.

Looking to the future we feel confident that the farmers of the country are going to establish in every agricultural county of the United States of America a permanent public extension organization.

We think they will be willing to do this because taxes for the work are replaced many fold by increased incomes and a much richer rural life resulting from the work.

Probably this county extension organization will usually be known as the County Farm Bureau. We think it will have a permanent annual budget and will coöperate universally with the state and nation in the employment of a county agent, a home demonstration agent, and a boys' and girls' club agent, each practically coördinate in their respective fields of action but coöperating closely in carrying out a common

program of development based upon real needs as determined by rural people themselves. Such is our conception of the modern Farm Bureau.

In the first period of its development it was a Farm Bureau organized largely by business interests for farmers; in the second period it was a Farm Bureau organized by farmers for farmers, with the employment of a man agent; in the third period it is a Farm Bureau organized on a public and permanent basis by the farm family for the farm family, with the employment of a man agent, a woman agent, a club agent.

DOES LUXURIOUS EXPENDITURE GIVE EMPLOYMENT TO LABOR?

R. G. BLAKEY

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We see in these days, especially since the close of the war, many advertisements urging that we buy this or that luxury because it will give employment to labor. Even before the war many people had the idea that the giving of extravagant banquets and the spending of money lavishly, especially on the part of the rich, were desirable because they kept many people busy. Many laborers have had somewhat the same idea, exemplified in their efforts to limit the amount which any man can produce, thinking that thereby there will be more work created or left for others. While there is a shadow of truth in all of these ideas, the underlying and principal notion is, for the most part, fallacious.

The spending for luxuries does give employment to labor, but both in the long run and immediately such expenditure has usually less advantage for labor than the spending of money on more useful things, or than the saving of money. Money saved is not idle. Ordinarily, it is either invested directly in houses, or machines, or factories, or deposited in savings banks, or with life insurance companies, or other institutions which lend it to business men for the construction of railroads, or houses, or irrigation enterprises, or other projects. The production of these forms of capital gives as much employment to labor in the present as do the production of luxuries consumed at once. These forms of capital, since they, too, are of further advantage to labor, mean instruments which produce clothing and food and other consumption goods in large quantities and hence cheaper consumption goods for labor in the future.

Another false notion connected with the idea of limiting output and making work by luxurious expenditure is the implied belief that there is just a certain quantity of work to be done, no more and no less. As a matter of fact man's wants are indefinitely large. His wants increase even faster than his income. As soon as he can satisfy his primary needs for food and clothing, he has other wants. He likes better kinds of food, better kinds of clothing, better houses, better furniture, pictures, music, automobiles, yachts, aeroplanes. In fact if he could double his production, his wants would increase sufficiently to use up everything that he could produce.

What too many people do not understand is that wages in general are not increased by limiting output and hence making work for more laborers, but by increasing output and hence making the employer more able to pay higher wages; not because he is philanthropic and willing to pay merely because the workers produce more, but because other employers are in competition with him and will pay them more if they produce it. Of course this assumes competition among employers and is not true when there is not free competition in bidding for labor, or when there is not mobility of labor so that it can go freely from one employment or place to another.

Saving, therefore, which really means wise spending, means just as much employment for labor and ultimately better conditions for labor than does foolish spending. Still further, the more all of us produce the more we shall have to spend in the present as well as in the future and the better we can take care of the needs of both the present and the future.

The great difficulty in meeting these fallacies, which are very commonly held, is that there are individual cases which are real exceptions. It is true that often these ideas are not fallacious when only a short-sighted view is taken, or when only the individual is considered. But all of these ideas are contrary to the interests of society as a whole and labor as a whole, although they may be to the temporary advantage of society and, possibly, to the ultimate advantage of an individual. But this is no reason why society should encourage these non-social practices. To take an extreme case, it may be to the interest of a certain individual to steal or murder. In fact, it may be to his permanent interest to do so if he can escape unpunished, though this is doubtful, but no one would argue on that account that it is best that society should continue to let him rob and murder.

EDITORIAL

New Conditions and New Duties. Robert Louis Stevenson's phrase "The world is so full of a number of things" is more than ever applicable to the home economics world today. Not only are the things that we have always considered the main part of our work just as pressing as ever, but there are constantly arising new plans and new efforts that we feel belong to us just as truly as to those that originated them. Americanization is one of these, for it is only as the home is Americanized, in the best sense, that the man of foreign birth can really fulfill his part, in the best way, as a citizen.

The health campaign that is being undertaken jointly by several different agencies with the effort to create a health department in the Federal government also lies well within our field. The welfare of the child, the prevention of disease by right living, the setting of standards of health in the home, all these are without question the concern of home economics. That the thrift campaign is partly ours also is emphasized by the fact that the Treasury has asked home economics to take a definite share in it, though, of course, we ourselves needed no such recognition to remind us that the home is not only the place where thrift is practiced, but the place where it is inculcated in the habits of the rising generation.

The Council of the American Home Economics Association at its meeting in Baltimore recognized its concern with these phases of public work by passing the following resolutions.

Resolved, That the Council of the American Home Economics Association on behalf of the Association membership, offers the coöperation of this body of trained workers in the projected campaign of the U. S. Treasury on the right use of money. The Council further ventures to urge upon those responsible for this campaign the very great importance of restricting the list of officially authorized speakers in this campaign to men and women who are adequately prepared by training and experience for such a task. From the experience of its members, who come from every state in the Union, the Association has learned the grave danger of employing speakers who have no fundamental knowledge of economics or experience in adapting this knowl-

edge to family and personal expenditure, and who, with the best intentions and fine patriotism, may, because of their ignorance, discredit the campaign and those who promote it.

Resolved, That the American Home Economics Association, in common with all organizations working for the advancement of public welfare, feels both its field of effort and the emphasis of its work to be modified by new conditions. In view of this fact the Association pledges itself to special efforts within its own field by laying strong emphasis upon all its agencies for the promotion of health, not only of the child but also of the adult, both by the addition if necessary, of special courses, and also by cordial coöperation with state and national agencies working to this end.

Resolved, That, in view of the world citizenship we are now called upon to share, it is incumbent upon those responsible for the training of others to develop in them an intelligent and sympathetic attitude toward foreign-born peoples in order that work among them may be more effective. To this end it is suggested that a study be made, either formal or informal, of the domestic manners and customs of other races and peoples, their origin and intention.

Methods of Americanization. Jane Addams has long ago reminded us that the foreigners that come to our doors have as much to contribute to us as we have to give to them. Certainly we can neither give nor take without knowledge, without an understanding of their point of view, without the sympathetic attitude toward their problems that can come only from familiarity with their customs and habits.

It is with special interest then that we have received from Miss Breckinridge of the University of Chicago and the Chicago School of Civics and Philanthropy the following outline of a course of study that a group of students in the University suggest might be embodied in the curricula of home economics departments and departments of education to inform students concerning the practices, habits, and attitudes of the leading national groups and to prepare the students for intimate and helpful contacts.

Miss Breckinridge writes:

A very large proportion of our population is composed of persons who were either born in other countries or who are the children of foreign born parents. Many of our foreign born come from countries in which another language than English is spoken and in which educational opportunities are limited. On arrival in this country they therefore tend to form segregated national groups and to enter occupations requiring little or no skill. Their wages have in the past been very low and their living conditions hostile to sound

physical or social development. They bring with them the attitudes and practices of the old country and are often allowed to live in surroundings less favorable than those from which they came, without receiving such assistance as could enable them to modify their environment. The conditions of bad housing, neglected streets and alleys, lack of play-space, high prices for foods they have been accustomed to growing rather than buying, are hostile especially to child life. The various social agencies that come into contact with them are often quite ignorant both of their earlier habits and practices and of the difficulties under which they labor. The teacher of home economics, the visiting housekeeper of the charitable society, and the public health nurse enjoy especially rich opportunities of bridging the gap that separates such groups from each other and from the older American community. Such assistance seems the basis for true Americanization and seems due to homes from which boys went to serve in the A. E. F. and to which they will return as "veteran" soldiers.

OUTLINE AND REFERENCES

1. Status of the American Family
2. Status of the Foreign Family in the Old Country as Represented by Selected Groups
 - a. The "Older" Immigration
 - 1) Irish. The Flight from Famine
 - 2) German. The Quest for Constitutional Freedom
 - 3) Scandinavian and Other Northern Groups
References: Daniels, Home Life in Norway
 Reade, Finland and the Finns
 - b. The "New" Immigration
 - 1) Polish
References: Thomas and Znaniecki, The Polish Peasant
 Hill, Poland
 - 2) Bohemians and Moravians (Czecho-Slovaks)
References: Balch, Our Slavic Fellow-Citizens
 Steiner, On the Trail of the Immigrant
 - 3) Magyars and South Slavs
Reference: Alden, Hungary of Today (1909)
 - 4) Italians
Reference: King and Oakey, Italy Today
 - 5) Russians
References: Berard, The Russian Empire and Czarism
 Kennard, The Russian Peasant
 Haenen and Stewart, Provincial Russia

6) The Turk

References: Cobb, The Real Turk
Garnett, Turkish Life in Town and Country

7) The Mexican

Reference: De Lara and Pinchon, The Mexican People

8) The Japanese

References: Millis, Japanese Problem in the United States
Gulick, The American Japanese Problem

Selection should be made from among these groups on the basis of the population of the community in which the institution is located; and with the aid of these and other sources, the selected groups should be studied as to their family customs and traditions, their social practices in the old country, their educational and industrial opportunities in the old country.

3. The Living and Working Conditions in the United States of the Same Groups

a. The Kinds of Communities into Which They go and the Nature of Their Work

- 1) Urban. *See* U. S. Immigration Commission, Vols. 26 and 27
- 2) Mining. *See* U. S. Immigration Commission, Vols. 6 and 7
- 3) Iron and Steel Manufacture. *See* U. S. Immigration Commission, Vols. 8 and 9
- 4) Rural. *See* U. S. Immigration Commission, Vols. 21 and 22

See also

Woman and Child Wage-Earners, Vols. I and XVI

U. S. Bureau of Labor Report (62d Cong., 2d sess., Senate, Doc. 870)

U. S. Bureau of Labor Report (61st Cong., 2d sess., Senate, Doc. 521)

U. S. Bureau of Labor Report (62d Cong., 2d sess., H. of R., Doc. 847)

Byington, Homestead, the Households of a Mill Town

Kellogg, The Pittsburgh Survey

b. Standards of Living

See Chapin, Standards of Living Among Workingmen's Families in New York

Byington, Homestead, the Households of a Mill Town

Cost of Living

Selected Recipes of National Dishes

4. Practice Teaching related to these studies to be planned with special reference to groups in the community where the university is located. Contacts to be obtained
 - a. Through school children—school lunch
 - b. Through charities
 - c. Through public health nurse, and to include
 - Budget making for special groups
 - Instruction of mother in household practices
 - Preparation of diets for family, and for special cases, such as the 1) Undernourished child, 2) Expectant mother, 3) Nursing mother, 4) Tuberculosis.

Miss Breckinridge has lately been appointed Chief of the Division of Adjustment of Homes and Family Life in the Study of Methods of Americanization undertaken by the Carnegie Foundation. She asks that the readers of the JOURNAL give her the benefit of their experience and judgment in regard to the feasibility of these courses. She also asks for an opinion as to whether they should be given as distinctive courses in home economics departments or whether they should be subdivided, with the food habits considered in the food courses, clothing customs in the clothing courses, and so on. Do the courses as a whole belong to home economics or sociology?

The JOURNAL hopes that there will be many letters giving opinions as to these questions. They may be sent either to the JOURNAL or to Miss Breckinridge.

Thrift is wise spending of time and money—getting the most out of one's time, getting the most out of one's strength, getting the most out of one's earnings.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

A GROUP OF COOK BOOKS—WAR AND OTHERWISE

The Blue Grass Cook Book. By MINERVA C. FOX. New York: Charles Scribners Sons, 1918, pp. 350. \$1.50.

Just what ground the publishers have for calling this a "new and revised edition" is not apparent.

A comparison of the "contents" (there is no index) in the two editions shows no new titles, merely a change in order on the first two pages. A careful examination of a large part of the two books page by page disclosed no change but the omission of one recipe for potato salad. Thus it would appear that no library possessing the first edition needs this one.

As to fitness for war times or reconstruction, there is little. The whole volume is a look backward to days of great abundance and generous hospitality as is indicated by the charming introduction by John Fox, Jr.

In these prohibition days, a real revision would probably have modified the many recipes for desserts which demand the wine-glass of brandy, half pint of whisky or rum, and for the beverages where some liquor is an essential ingredient.

Economical Cookery. By MARION HARRIS NEIL. Boston: Little, Brown, and Company, 1918, pp. 346. \$1.50.

This is a real contribution from a careful writer and will prove helpful in the home, and in the reference library for home economics classes.

It deals with the processes of cookery rather than the reasons and has little to say of nutritive values. The recipes are sometimes intricate and aim at novelty and decorative effect, but that is perhaps necessary to get the attention of the public.

In the main, however it is a good all

around cook book and includes some of the best war cookery, to use in times of peace.

Economical War-time Cook Book. By JANET M. HILL. Boston: Boston Cooking School Magazine Company, 1918, pp. 64. 25 cents.

Mrs. Hill's carefully made recipes are too well-known to need discussion, and the same attention is given to war-time materials that is found in her magazine and books. Here in less than a hundred pages are given directions for some excellent "wheatless, meatless, sweetless" dishes worthy to use for many a day to come even though the immediate necessity for emphasizing them has disappeared. Any one owning Mrs. Hill's other books will want this as a supplement and others will do well to secure it.

Caroline King's Cook-Book. By CAROLINE KING. Boston: Little, Brown and Company, 1918, pp. 275. \$1.50.

The author of this volume is a teacher for the University Extension Society of Philadelphia. The subject is handled in the way it is taught in the schools, a foundation formula being well explained and suggestions given, instead of many separate and often unrelated recipes, such as public and publishers too often demand.

The classification is good, and the subject matter appears to be well-arranged. The book would make a better appeal to the average reader if more attention had been given to paraphrasing.

The Liberty Cook-Book. By BERTHA STOCKBRIDGE. New York: Appleton and Company, 1918, pp. 493. \$2.00.

The best quarter of this book is the last, on "Up-to-Date Canning" of which the

author says, "The directions given are based upon the Department of Agriculture's recommendations, which have been verified in my own kitchen." By comparison with the U. S. bulletins, this part is not sufficiently original to be sold to the public, since the bulletins are free.

The foreword indicates that Mrs. Stockbridge wished to be of service "to the woman of a fairly large income who really wants to economize, not from necessity, but as a patriotic duty."

We hope her "bit" counted. It might have served its purpose in the columns of the daily press. But a careful reading fails to find enough of value to warrant a volume of this size. Both carelessness in editing and lack of knowledge of fundamental principles are apparent.

For example: on page 9 are three recipes, similar in quantity, for steamed brown breads containing from $2\frac{1}{2}$ to 3 cups of meal.

One gives $2\frac{1}{2}$ tsp. of soda with $\frac{1}{2}$ cup molasses and 2 cups sour milk or $1\frac{1}{2}$ cup sweet milk.

The next has $1\frac{1}{2}$ tsp. soda with the same amounts of molasses and sweet milk. The last gives only $\frac{1}{2}$ tsp. soda with one half cup molasses and $1\frac{1}{2}$ cup milk.

This is enough to make any intelligent cook distrust the rest of the book.

There is much space wasted in a conversational style, perhaps suitable in the newspaper, but not adapted to such a book.

When paper and labor are scarce it seems a pity to have them expended to so little purpose.

ANNA BARROWS

Department Store Merchandise Manuals.

The Educational Director. By BEULAH ELFRETH KENNARD, M.A. New York: The Ronald Press, 1918. \$1.50.

Of the ten manuals¹ that are now on the market, "The Educational Director" is unique and perhaps the most interesting in its type of subject matter. Every intelligent shopper who has felt the need of edu-

cating salespeople for this particular work will welcome this movement. While other manuals deal with the technical subject matter for such instruction, with which domestic art people are more or less familiar, this book deals with the administrative and organization problems, the psychological, social, and economical aspects. The manual states very clearly and directly the many sided character of the work of the educational director, and gives her practical suggestions for carrying on the work.

The scope of her work is outlined under four heads as follows:

1. Relating to store organization. Her first task is to make a constructive educational plan. She must know the conditions and the materials with which her work is to be done, and she must attempt to secure a better coöperation between the different elements in the store.

2. Training in qualifications essential to good salesmanship, aside from technical training. In her program she must meet the need for broader education, including not only knowledge of merchandise but knowledge of the customer. She must be trained in constructive self criticism, in the development of imagination, judgment, tact, and poise, which many salespeople underestimate.

3. The welfare and social interest of the employee and the problem of employment and promotion. The mental and physical condition of the salesman is of vital importance in making for efficiency in service. Perhaps placement and promotion are due the employees after they have done their part and shown improvement.

4. Relation of the store to the community.

The manual shows very plainly that technical knowledge is of very little use unless it is based upon a knowledge of the opportunity and limitation of the store, a familiarity with the personnel of the classes, and a comprehension of the salesmanship job.

IVA BRANDT,

Iowa State College.

¹ Other manuals were reviewed in the May, 1918, JOURNAL. Besides the one reviewed above, the recent ones include Silk, Millinery, Glassware, and House Furnishings.

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NEWS FROM THE FIELD

The Textile Section of the American Home Economics Association has formed committees to study the following topics: A Survey of the Course of Study in Household Art; The Formulation of Series of Problems in Successful Shopping; The Basis for Marking Household Art Students; The Educational Value of Red Cross Work; The Value of Short Cuts.

These committees were instructed by the Chairman to spend the ensuing year collecting data for a report to be made at the meeting to be held during the summer of 1919. The subjects were the result of the discussion at the annual meeting, in response to the query, "What type of Household Art material needs to be standardized?"

Nursing and Home Economics.—At the University of the State of Washington in 1917-18 a nurse's course was added to the curriculum. Students may take three years at the University, followed by two years in the Nurses Training School, graduating at the end of five years as a registered nurse with a Bachelor of Science Degree.

A nurse's course has also been established in the University of Wisconsin that may be completed in less time than five years by taking summer work. In Ohio State University, the five years nurse's course parallels the work in home economics for the first three years.

The nurse's course in the University of Iowa is on much the same plan as the Vassar course.

The State Normal School at Harrisonburg, Virginia, has been selected by the Federal Board for Vocational Education to train teachers in home economics under the Smith-Hughes Act. This year thirty-seven students are registered for the first

year of the course, which includes four years of work of strictly college grade.

The school also offers a two-year course in home economics for teachers of elementary schools, and gives to all students of the preparatory year a general course in foods, shelter, and clothing.

The department is under the charge of Miss S. Frances Sale assisted by five instructors and five assistants, graduate students completing the B.S. course.

Members of the senior class live in the Practice House twelve weeks each, and are required to do practice teaching for twenty-four weeks in the schools of the city and the surrounding country. The county appropriates the traveling expenses and the Normal School furnishes an automobile.

The College of William and Mary, Williamsburg, Virginia, has been made one of the two centers for the training of teachers of home economics in Virginia, under the Smith-Hughes Act, and Miss Edith Baer, formerly of Drexel, has been made professor of home economics and director of the department.

As the work is still in its infancy, Miss Baer's time is not fully occupied and she has recently been also appointed supervisor of home economics for the state of Virginia, giving two-fifths of her time to this work.

Women's Club Markets Own Products. The women of a Tennessee home demonstration club are marketing their own vegetables, small fruits, eggs, poultry, butter, and cottage cheese with the help of the local home demonstration agent. The products have been attractively displayed at the entrance to the market house. The club members are making a specialty of week-end baskets filled to order to meet the tastes of the purchasers.

Communal Kitchens in England now number nearly 1000, and are giving great satisfaction. The government provides 25 per cent of the initial outlay as a loan and another 25 per cent as an outright grant, the other 50 per cent being paid by the municipalities. The average price of individual dinners is said to be about sixteen cents.

Homes for Workers Engaged in War Industries. London has its housing difficulties, no less than cities in this country, and is planning an expenditure of £3,500,000 to solve the problem.

The program is to provide for seven years after the conclusion of peace, since abnormal conditions are expected to prevail during this period.

The committee also plans to raze insanitary dwellings and to replace them with more approved structures.

The Recognition of Home Economics.—The importance of home economics has been recognized in several recent Educational Surveys—that of the public school system of San Francisco; of public education in the state of South Dakota; in the survey of schools at Elyria, Ohio; and of the schools of Columbia, South Carolina; and in the Tennessee Educational Survey. In the report of each of these surveys, home economics has a separate chapter or section of a chapter.

Notes. Miss Edna L. Skinner has accepted a position at Massachusetts Agricultural College, to organize and head a Department of Home Economics. The College has never offered special courses for women, though their extension work in this field is well developed. The work will lay especial emphasis on rural homemaking.

Mrs. Nellie Kedzie Jones, who has the honor of having trained some of the best known home economics teachers, has undertaken the work of State Leader of

Home Demonstration Agents for Wisconsin. Mrs. Jones's experience as head of the department at Kansas State Agricultural College and at Bradley Polytechnic, her work at Berea, and her most acceptable lecture tours through the West, as well as her practical experience on her own farm, all make her invaluable as a state extension worker. We congratulate Wisconsin.

Mrs. Jones writes: "You may be interested to know that the Home Demonstration Agents in this state have done wonderful work in the recent and present influenza situation. One prominent man in a large city said to me of the Home Demonstration Agent, 'I want you to know that the whole city is taking off its hat to her because of the work she has done.' In the large fires in the northern part of the state the Home Demonstration Agents were most helpful and in fact each county, fortunate enough to have one, believes in her and knows that she is a mighty power for good."

Miss Alice Bradley, well known as the head of Miss Farmer's School of Cookery has lately gone to Drexel Institute as Professor of Dietetics in charge of a new department for training army dietitians.

The classes have had as practice laboratory the Mess Hall of 250 students in the S. A. T. C., the student's house dining room in which there are 120 young women, and the Institute Cafeteria. Miss Bradley continues lecturing at her own school in Boston while she is inaugurating her new work.

In Mills College, California, the house sanitation courses have been transferred to the Physics Department and are called applied physics.

At the University of Indiana a course is given on the Care, Management, and Training of Children below School Age, and one on Women and Children in Industry.

The University of Minnesota offers a course in Commercial Clothing Manufacture.

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A MALNUTRITION CLINIC AS A UNIVERSITY PROBLEM IN APPLIED DIETARIES¹

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A year's work with malnourished children in coöperation with pediatricians in the dispensary had shown that the problem of bringing these underweight children up to normal was largely one of diet. Experience in teaching university classes in home economics had likewise shown that work in dietaries would be much more vital if taught in connection with some actual human need for the work. Such a need, without a doubt, the dispensary children furnished. It was decided, therefore, to offer work in a malnutrition clinic as a university course in applied dietaries. A small group of advanced students, having a good scientific foundation of physiology, nutrition, food preparation, marketing, and dietaries, enrolled in the course.

A number of underweight children were selected from ones who had already been in the dispensary a few times and showed need of intensive work. Others were referred to the class by the pediatricians as they were found in the clinics. The conduct of the class was very similar to that described by Dr. Emerson² and Dr. Smith.³ It differed, however, in that it was conducted, not by a physician, but by "diet specialists,"

¹ The work was done in the Central Free Dispensary of Rush Medical College.

² *Class Method in Dietetic and Hygienic Treatment of Delicate Children.* Emerson. *Pediatrics*, 22 (1910), p. 627.

³ *Methods of Conducting a Class for Malnourished Children.* Chas. Hendie Smith, M.D. *Amer. Jour. Dis. Chil.* 15 (1918), p. 373.

who, as it happened, were teachers of children as well. This does not mean, of course, that the work was done independently of the physician; it was merely a division of labor. The children were all given thorough examination and all necessary medical treatment by the physicians, who then referred the ones in need of dietary help to the diet specialists, exactly as eye and ear cases were turned over to their respective clinics. The ones in need of medical supervision reported to the physician each week before coming to the diet class, others with nothing at fault but diet and hygiene came directly to the class. The children met once a week on Saturday mornings. No attempt was made to secure a large group, since intensive rather than extensive work was desired.

Each student was given at least two or three cases as her special responsibility. Her first duty on a new case was to ascertain the child's height, weight, and habits of diet and hygiene. She then plotted his weight chart, explained its significance to him and to his mother, and gave dietetic and hygienic advice based on her findings. This was merely the beginning, however, for the case was her problem and she was expected to find its full solution. She must determine all the symptoms of malnutrition present, find out all the causes, specific and remote, which were responsible for the condition, and do everything which might be necessary to remove these causes and produce a gain. This required, first of all, a visit to the home to find out all conditions under which the child lived. It meant planning an adequate diet which should vary as little as possible from the family's customary one, and which should cost well within the family's means. Often a survey of the markets in the neighborhood was necessary to learn the kinds and qualities of goods and their prices, in order to help the mother make her limited purse cover the cost of adequate food. The mothers needed to be taught how to prepare foods and the children persuaded to eat them. In almost every instance the worker found she must supplement to a great extent the lack of parental control in matters of sleep, rest, and habits of eating.

At the clinic the student took special charge of her own cases, listened to the discussion of the others, and helped prepare food exhibits, diet slips, and recipes needed in the class. She made at least one home visit each week, saw that the child attended clinic regularly, and was held personally responsible if he lost or failed to gain. She kept a complete record of the case, and at the end submitted a written report analyzing and summarizing the findings and results of her work according to a

prescribed outline. The following cases with their accompanying charts will show the type of work done and the results obtained.

Chart I shows the effect of three weeks intensive treatment on a family of three children aged six, nine, and eleven years. The cases were very interesting, as they showed practically every symptom of malnutrition. All were much underweight—9, 16, and $11\frac{1}{2}$ pounds, or about 20, 24, and 17%, respectively. In appearance they were emaciated, anemic, and of an earthy color. They had “winged” shoulders, narrow chests, flabby muscles and skins, and dark hollows under the eyes. They were extremely irritable and finicky about their food. They were always tired, did not care to play with other children, and had no power of concentration; the expression of their faces was lifeless and dull. They lacked, in short, every characteristic of normal children. The physicians found nothing clinically wrong with any of them; so they were turned over to the diet class for treatment.

The student to whose lot these children fell heaved a sigh at the thought of the undertaking; for there remained but three weeks in which to work, and to hope to accomplish much on such extreme cases in so short a time seemed out of the question. She attacked the case with extra vigor, however, being determined to win if any amount of time and labor of hers could accomplish it.

At the beginning she made visits to the home every second day, arriving before breakfast and staying till after lunch in order to help prepare the meals and see that the children ate them—a thing the mother was utterly powerless to do. It was this inability of the mother to control her children which was one of the chief causes of their condition. They ate what and when they pleased and slept only when nature forced them to. In addition to her lack of home control, the mother was totally ignorant of the food needs of children, as well as of American foods and methods of cooking. Poverty was not a factor. The father earned good wages and was able and willing to buy what his family needed.

The diet of the children was deficient both in quality and quantity. They had scarcely any milk, no cereals, no meat, no butter, and practically no fruits nor vegetables. They ate “cakes,” “polly seeds,” much candy, potatoes, some sort of dried fish, and tomatoes occasionally. A liberal estimate of the fuel value of the day's diet (exclusive of candy) was 500 calories. Combined with the inadequacy of food there were hurried meals, lack of exercise, and insufficient sleep. The children were in such a subnormal condition from long continued underfeeding that

they were with great difficulty and only very gradually coaxed, urged, tempted, and bribed into taking suitable food in sufficient amounts. It was necessary almost literally to "camp on the job" at first. When the children began to gain, however, the father became interested, assumed some of the responsibility, and forced the mother to do the same.

The results of the three weeks' treatment were that the children had gained 5, 4, and $4\frac{1}{2}$ pounds, respectively; they were much improved in color, and markedly so in disposition; they were less finicky about foods, and were eating good breakfasts and a full day's diet quite willingly with little candy and cakes between meals. A comparison of diets estimated at the beginning and at the end shows most strikingly the changes in this respect.

| DIET AT THE BEGINNING | | DIET AT THE END OF THREE WEEKS | |
|--|-----------------|--------------------------------|-----------------|
| | <i>calories</i> | | <i>calories</i> |
| <i>Breakfast—</i> | | <i>Breakfast—</i> | |
| None. (Ate cake and candy during the morning) | | Prunes..... | 100 |
| | | Oatmeal..... | 175 |
| | | Sugar..... | 25 |
| | | Butter..... | 100 |
| | | Cream..... | 100 |
| | | Milk..... | 150 |
| | | | 650 |
| <i>Dinner—</i> | | <i>Dinner—</i> | |
| Potato..... | 50 | Stew | |
| Fish..... | 50 | Meat..... | 200 |
| Fruit..... | 50 | Potatoes..... | 25 |
| | 150 | Rice..... | 75 |
| (Candy and cakes and polly seeds during the afternoon) | | Milk and cream..... | 200 |
| | | Fruit..... | 50 |
| | | | 550 |
| <i>Supper—</i> | | <i>Supper—</i> | |
| Tomato..... | 50 | Potatoes..... | 150 |
| Soup..... | 100 | Egg..... | 75 |
| Cakes..... | 200 | Butter..... | 100 |
| | 350 | Tomatoes..... | 50 |
| | | Milk and cream..... | 200 |
| | | | 575 |
| Total for the day (not including candy eaten between meals)..... | 500 | Total for the day..... | 1775 |

CHART I

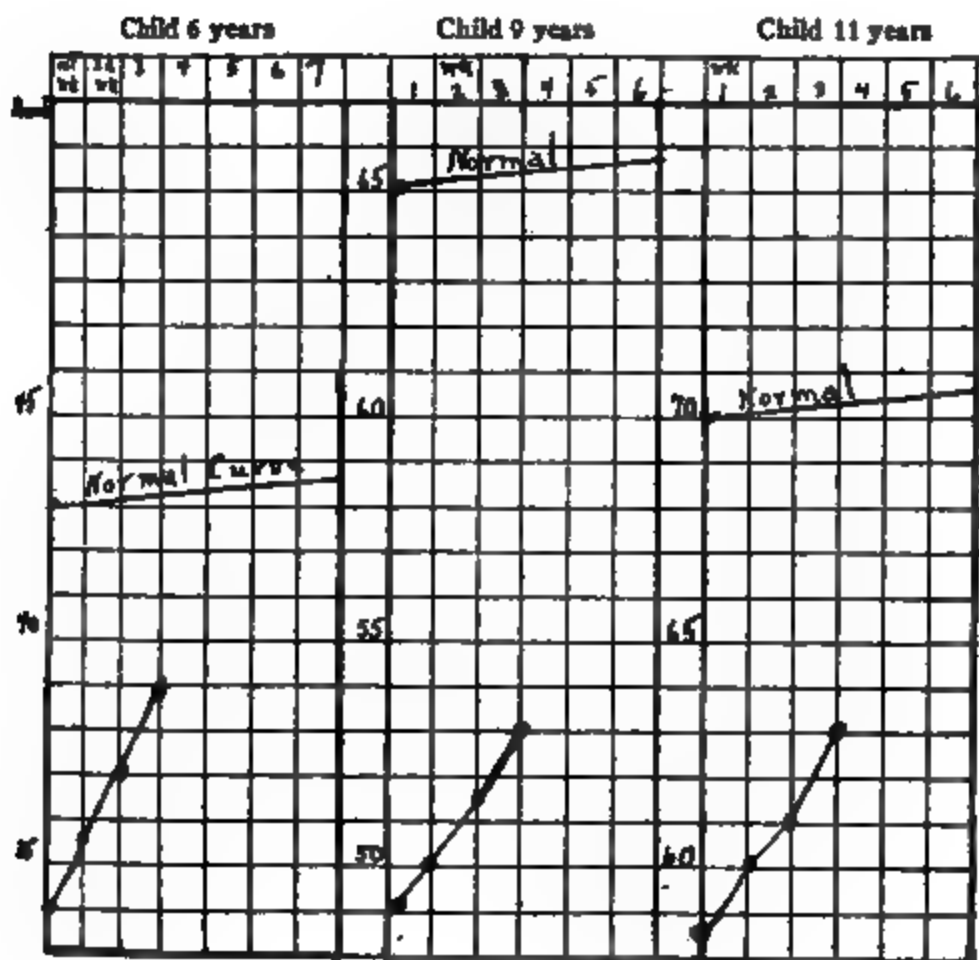


CHART II

CHART III

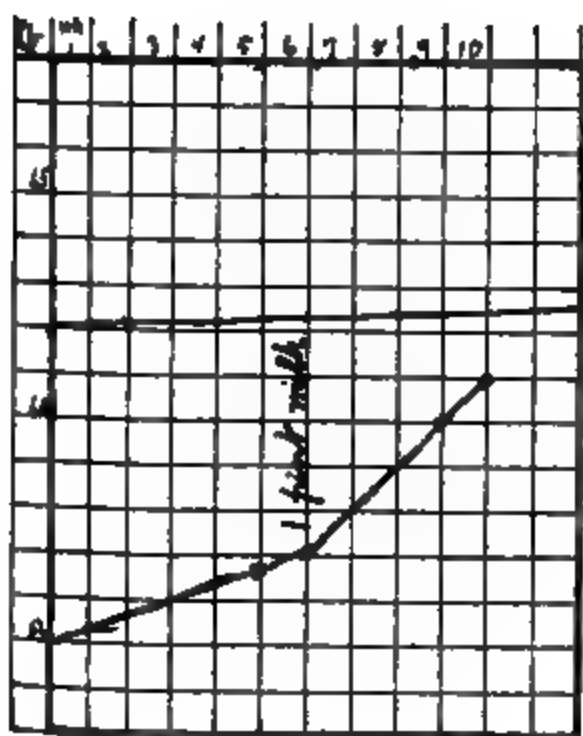
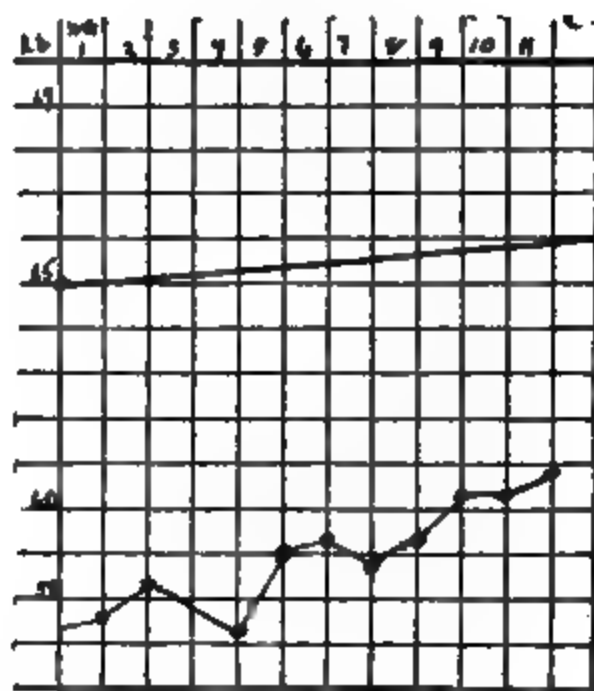


CHART IV



To be sure, much remained to be done, and the cases should have been under supervision for a longer time. A beginning had been made, however; the mother now knew something of what to feed children and how to prepare it, and the father promised to see that the treatment was continued. The improvement in the children's disposition alone, he considered, made any effort and expense worth while.

These cases have been reported thus in detail because they illustrate many of the points which arise in the handling of such children. A few other cases which show special points will be mentioned briefly. Other interesting cases could be given, but these few are enough to show some of the typical difficulties encountered and the results secured.

Chart II shows the improvement in a 12 year old girl when dietary treatment was combined with medical care. Up to the point marked 3 she was under medical supervision only. At that point she was referred to the diet class and her curve began to move steadily upwards. This child was 11 per cent under weight and was troubled with chronic constipation.

Insufficient food, both in kind and amount, combined with worrying over schoolwork and sitting up till 11 o'clock to do "home work," were the determining causes in this case. The child was very responsive and intelligent and took the responsibility of her own case. She had gained $3\frac{1}{2}$ pounds in four weeks, was eating enough food of the right kind, was putting herself faithfully to bed at 9 o'clock, and her bowels were almost normal.

Chart III shows a comparatively easy case. Ignorance and poverty were both big factors in causing the undernutrition in this 8 year old child and her 6 year old sister. Adding to the diet a pint of milk and teaching the mother the value of some cheap foods like oatmeal, potatoes, and prunes, caused a rapid gain in both children.

Chart IV shows the relation between sleep, diet, and malnutrition. The diet was extremely faulty and the bedtime 11, 12, or even 1 o'clock. It was comparatively easy to improve the diet, but in spite of the child's eagerness to gain, 10 o'clock was about the best she could manage to do in the matter of getting herself to bed. The mother was of little assistance and the case was too far away to be closely supervised by the worker. As a result it took the child 10 weeks to gain 3 pounds.

More could be said concerning the instruction given the children in the class,—for a little informal series of lessons on children's foods with exhibits and simple demonstrations was given, together with talks on

sleep, hygiene, and general health problems. On the last day when a general review was given to find out (as it was explained to the children) whether they would now be able to take care of themselves, they passed a very creditable examination.

So much for the benefit of the nutrition class to the children. How about its value to the university students? It is unfortunate that there is no graphic method of plotting their gains such as was possible with those of the children, for the results would undoubtedly be quite as startling. Aside from the new knowledge gained of malnutrition itself, of the relation between diet and health, and especially of the intimate connection between diet and the various other factors of living, the work demanded the reorganization and use for a specific purpose of much of the material of previous courses in nutrition, cooking, marketing, and dietaries. Making a minimum cost diet for a real child, desperately in need of help, was quite a different problem from sitting in a classroom and planning one for an imaginary child.

Nor must we forget that these students are teachers going out to work in the public schools of the country. When we consider the large number of malnourished children in the schools, as shown by recent investigations,⁴ it is a satisfaction to realize that any students who have done this practical work with children can never become mere teachers of cooking or abstract dietetics. They will not only be able to recognize such children in their classes and throughout the school, but can hardly fail to add to their teaching the task of improving the nutrition of the children with whom they come in contact.

⁴ Malnutrition in Children. Weekly Bulletin of Dept. of Health, City of N. Y., 6 (1918), p. 75.

OUTLINES ON CHILD CARE

DOROTHY REED MENDENHALL, M.D.

Children's Bureau, United States Department of Labor

As a part of the Children's Year Program, Miss Lathrop advocated the promotion of school, college, and extension courses in child care, so that it was particularly gratifying when the Federal Board for Vocational Education asked the Children's Bureau to coöperate with them in the preparation of outlines for a college course on Child Care and Child Welfare.

Last June, fifty tentative topics for outlines for such a course were presented at the meeting of the American Home Economics Association in Chicago. This venture is part of the vocational education plan to train teachers to teach infant hygiene in high schools, but it is hoped that the outlines may possibly have a wider application. In some of our leading colleges and universities, a similar course, or parts of such a course, is already being given with most gratifying results. Our aim in the preparation of this course is to standardize the teaching of child care, and to have the presentation of child welfare cover all the important phases of childhood.

A number of these outlines, those dealing with the mother and with the special child, have been finished, and work on other sections is under way. It has been thought necessary to include in the outlines considerable informative material for the use of the teacher, material of which she should be cognizant before attempting to give such a course or to supervise its presentation, but which would probably be unwise to put in the hands of individual pupils. Thus, in a way, the outlines with the reading references which accompany them will form a text-book for the use of college teachers, rather than a skeleton outline of lectures to be delivered to a class.

Lest there be confusion in the teacher's mind as to just what should be included in the material presented to the class, thirty topics for a semester course have also been prepared. Material from several outlines may be used in the preparation of a single topic. The Children's Bureau is anxious to have the reaction of teachers of home economics on the scope of this course. It includes, as it now stands, the whole subject of the child, any part of which could be enlarged and given more fully, if desired. Much of it, especially the nutrition of the child, is already

given in other courses. There are obvious advantages in presenting the subject of childhood as a whole, and there is obvious need for informing the teacher, who is to present the subject of infant and child hygiene to the young girl, of the health problems of the school and of the physical and mental changes of adolescence.

A comprehensive bibliography will accompany the complete set of outlines, with page references to the different subjects.

The Federal Board for Vocational Education is preparing to send out immediately to departments of home economics the ten completed outlines, and the suggested topics for a semester course on the child, in order to have the benefit of the criticism and advice of those who are to give the course.

In the preparation of the other outlines, we are especially anxious to know if this material seems of value to the teacher, or whether a skeleton outline of the proposed thirty lectures on the child would be more useful.

Communications should be addressed to Dr. Dorothy Reed Mendenhall, The Children' Bureau, Department of Labor, Washington, D. C.

THE CHILD

Thirty Suggested Topics for a College Course in Home Economics

1. The Preparation for Motherhood. The Rights of the Child.
2. The Expectant Mother and Prenatal Care.
3. Preparation for Confinement and Birth of the Baby (may be omitted).
4. The Lying-in Period. First Care of the Baby.
5. The Nursing Period.
6. Substitutes for Mother's Milk, Cow's Milk, and Proprietary Foods.
7. Artificial Feeding of the Infant. The Modification of Milk.
8. Feeding the First Two Years.
9. Infant Care. General Hygiene.
10. The Bath. Clothing.
11. Environment—Housing, Nursery, Furnishing, and Equipment.
12. Normal Physical Growth and Development in Infancy.
13. Mental Growth in Infancy and Training.
14. Care and Feeding of the Pre-School Child.
15. The Special Senses and Teeth. General Hygiene.
16. Prevention and Correction of Physical Defects.
17. The Value of Play in Childhood.
18. Nutrition and Care of the School Child.
19. School Hygiene and Medical Inspection.
20. Infectious Disease and its Result.
21. Children's Diseases—the Eruptive Fevers, Whooping Cough, Mumps.
22. Psychology of Childhood and Methods of Child Training.
23. The Unusual Child.
24. Sex Instruction and Hygiene.
25. Physical Growth and Development at Puberty.
26. The Adolescent Period and Vocational Guidance.
27. The State and the Special Child.
28. Rural Health Problems and the Rural School.
29. General

Neglect of Maternity and Infancy. Maternal and Infant Mortality. Birth Registration. 30. Child Welfare Agencies. The Public Protection of Maternity and Infancy.

Proposed Topics for Outlines on Child Care and Child Welfare for the Use of Teachers of Home Economics in Colleges

Introduction. I, II, and III. Health Problems of Mother and Child. IV. Child Mentality and Management. V. Recreation and Physical Training. VI. Child Labor. VII. Children in Need of Special Care.

I-III. Health Problems of Mother and Child.

The Child: General Considerations. Society and the child. The home and the child. Parenthood: the greatest of all human responsibilities. Possibilities of the child. Rights of the child. The state and the child.

Birth Registration. Registration area for births. Birth registration laws. Registration area for deaths. Importance of complete and accurate registration of vital statistics. Importance of birth registration. Birth registration test. Significant facts shown by statistics. Infant mortality.

Prenatal Care. Maternal mortality. Underlying causes of maternal mortality. Relation of infant mortality and maternal care. Prevention of maternal mortality and infant mortality. Hygiene of the expectant mother. Value of prenatal care. Signs of pregnancy. Duration of pregnancy. Public protection of maternity and early infancy.

Disorders and Dangers of Pregnancy. Disturbances of digestion. Disturbances of elimination. Other disturbances. Pressure symptoms. Fallacy of maternal impressions. Miscarriage. Auto-intoxication or toxemia. Child-bed fever.

Confinement. Necessary attendants. Places of confinement. Necessary supplies. Preparation for confinement. Labor. Course of labor. After labor. Birth emergencies.

The Lying-in Period. Necessity for rest in bed. Duration of needed rest after confinement. Physiological changes during puerperium. Care of the mother during puerperium. Care of the newborn infant.

The Nursing Period. Function of lactation. The mammary gland. Establishing lactation. Woman's milk. Hygiene of the nursing mother. Technic of nursing. Difficulties in breast feeding. Conditions causing disturbances in lactation. The feeding interval. Amount of milk taken at a single feeding and the total 24-hour intake. Nursing routine. Indications for taking infant from breast. Weaning.

Substitutes for Mother's Milk. Wet nursing. Cow's milk. Relative composition and digestibility. Dangers of milk. Pasteurization. The question of proprietary foods. Mortality among breast-fed and bottle-fed children. Legal protection for expectant and nursing mothers.

Artificial Feeding of Infant. Dilution of cow's milk. Whole milk versus cream mixtures. The use of carbohydrates. Preparing the food. Equipment. Care of utensils, bottles, and nipples. Amount of food. Interval.

The Care of the Infant. The home surroundings. The nursery. Nursery furniture. Bathing. Clothing. Sleep. Fresh air and ventilation. Play and exercise. Feeding the infant. Training rectum and bladder. Daily schedule. Essential health habits.

Normal Development of the Child. At birth. During infancy and childhood. Special senses. Curve of weight and height. Annual increment of growth. Characteristics of health. The unusual child.

Care and Feeding of the Child of Preschool Age. The neglected period. Governmental responsibility. Intelligent home care. Regular meals. Adequate diet. High death rate from infectious diseases during this period. Cause and prevention of remediable defects. Day nurseries. Nursery schools. Children's health conferences.

Nutrition of the Older Child. Differences in diet of the adult and the child. Amount of food needed. Essential foods. Proper food habits. Planning the meals. Danger of inadequate diet in the growth period. The hot school lunch. Treatment of under nourished children. The midmorning meal. Nutrition clinics.

Educational Hygiene. History and present status. Administration. The building. Hygiene of the child. Hygiene of the teacher. Medical inspection and the school nurse.

The Hygiene of the Special Senses and the Teeth. The function and care of the eye, ear, nose, and throat. Mouth breathing, and the danger of insufficient oxidation. Adenoids—cause, prevention, and treatment. The common cold. Diseased tonsils. Ear infections. The effect on growth and health of focal infections. Teeth.

Infectious Diseases. Great menace to childhood. Direct and indirect transmission. Symptoms of disease. Outline of care of patient. Discussion of diphtheria, tuberculosis, poliomyelitis.

Children's Diseases. The eruptive fevers, whooping cough, and mumps. Community and state control of communicable diseases. The necessity of individual coöperation.

Puberty and Adolescence. Structural changes. Functional changes. Mental changes. Disorders and dangers. Sex instruction. Hygiene of puberty. Protection of adolescence.

Housing and Income. Relation of family income to morbidity and mortality. Further effects of low income on child welfare. Minimum family income. The home and the child. Housing standards and legislation.

Rural Health Problems. Discussion of the high death rate at birth and the large percentage of remediable defects in rural school children. Isolation versus overcrowding of the city. Individual responsibility. Necessary education as to sanitation, disposal of waste, milk and water supply, health habits, and food. Medical inspection and the school nurse for rural schools.

Public Activities to Protect Maternity and Infancy. Federal, state, and municipal public health measures. Bureaus of maternal and infant hygiene. The public health nurse and her possibilities. Consultation centers for mothers and children. Other proposed measures for adequate protection for child life.

IV. *Child Mentality and Management.*

The Mental Development of Infancy. Study of the equipment with which a normal baby comes into the world and what it acquires from month to month—the development of an infant's perceptions and motor-coördinations. The means which should be provided to give the proper range of experience during this period.

The Psychology of Childhood and Methods of Child Training. The mental capacities and the normal interests of children of each age, from one year up to twelve. Methods of training explained as based upon a knowledge of a child's interests and capacities.

The Psychology of Adolescence and Vocational Guidance. The change of outlook and interest characteristic of the adolescent period and the use which should be made of this enlarged social outlook in helping a child to form plans for his own future.

Abnormalities of Mental Development and the Training of Exceptional Children. The characteristics of the defective child, the permanently retarded child, the temporarily retarded child, and the very superior child. Suggestions as to the type of training suitable to each.

The Relation of Mental Development to Moral Problems. The way in which moral delinquency may occur in case a child's mental development is either too poor or too good for the educational program assigned him. The instances in which apparent moral delinquency is mere mental deficiency. The type of delinquency in normal children which is due to mental conflict.

Management.

V. Recreation and Physical Training.

Philosophy and Theory of Play. Applied to children.

Nature of Play. Types of play. Leisure-time activities that instinct and social life have developed.

Modern Recreation. I. The rise of movements for group diversions. Group play for the young. Organized athletics. Organized dancing, drama, etc. The Boy Scout movement, history and meaning. Similar work among girls. The new faith in the mimic arts as recreative and socially valuable. II. The playground movement.

Relation of Socialized Play to Modern Industrial Life. Modern standards of play.

Physical Training.

VI. Child Labor.

History of Movement for Regulation and Prohibition.

Social Waste of Child Labor: Physical Deterioration, Poverty, Delinquency, Dependency.

Present Extent of Child Labor. *Standardized Child Labor Legislation.* *Administration of Child Labor Laws.* *Industrial Education and Vocational Direction.* *Special Problems of Child Labor.*

VII. Children in Need of Special Care.

Causes and Prevention of Child Dependency and Neglect. Lack of normal home. Inadequate family income. Parental neglect. Supplying means of livelihood to families whose breadwinners are absent or incapacitated. Adequate family incomes. Enforcement of parental responsibility and prevention of neglect.

Causes and Prevention of Juvenile Delinquency. Environmental. Physical and mental. Premature employment or employment under morally detrimental conditions. The spirit of adventure and the lack of opportunity for wholesome recreation. Maintenance and improvement of family standards. Community and civic betterment. Provision for discovery and treatment of physical and mental abnormalities and defects. Enforcement of compulsory education laws and child labor laws. Prohibition of premature or detrimental labor.

The Care of Dependent, Neglected, and Delinquent Children. Types of provision. Systems of care. History of the juvenile court movement. Jurisdiction—delinquent, dependent, and neglected children, adults involved, mothers' pensions. Organization. Fundamental principles. The probation system. Training schools and reformatories.

Children Handicapped Physically or Mentally. Causes of physical and mental defects. Types. Treatment.

Community Organization for Child Helping Work. National, state, and local. Work of state and community in which this course is given.

THE USE OF DESICCATED EGGS

LOIS LHAMON

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One vital problem which confronts us at present is that of maintaining a food supply, adequate as to kind and amount. This study of the preparation, composition, and use of desiccated or dried eggs is presented here in the hope that it may help to make known a comparatively new food product, and suggest ways in which it may be used.

Eggs, which have for so long been a staple article of food, frequently command prices out of proportion to their nutritive value. However it is not possible to judge them too closely on this basis alone, since because of peculiar characteristics they are valuable in the preparation of a great variety of foods, and are considered more or less indispensable. If a less expensive product can be substituted for at least a part of the fresh eggs used, without loss of nutritive value, a great saving may be effected.

In the commercial handling of eggs there is a tremendous loss due to decomposition, and to wastage of the so-called "cracks." The extent of the loss is shown by the following figures.¹ The value of poultry and eggs produced in the United States exceeds \$620,000,000 a year, 60 per cent of which represents the value of the eggs alone. In the marketing of these, 17 per cent are lost, due to broken, dirty, heated, shrunken, rotten, and moldy eggs. This 17 per cent loss, interpreted in money, amounts to \$65,240,000 annually.

Recently, methods have been devised for the preservation of some of these eggs which would otherwise be a complete loss. The two methods least open to criticism are freezing or desiccation after removal from the shell. Freezing is used quite extensively, but the resulting product is bulky, difficult to ship and impracticable for home use, in which we are most interested. Desiccation gives a product which is easily handled, both commercially and in the home, and is the more satisfactory of the two processes. It seems unnecessary to say here that several of the above mentioned classes of eggs are unfit for human consumption, and that there is no sort of treatment which will render them desirable. However 7 per cent of the 17 per cent loss as stated above is due to

¹ Improvement of the Farm Egg. H. M. Lamon and C. L. Apperman, U. S. Dept. of Agr., Bur. of Animal Industry, Bul. 141.

broken and shrunken eggs.² It is the broken eggs, commercially known as "checks" or "cracks," and the shrunken or "held" eggs for which desiccation is practicable. By the utilization of this 7 per cent there would result an annual saving of \$4,400,000, as well as the saving of a large amount of wholesome food material.

Preparation of Desiccated Eggs. The commercial desiccation of eggs is described by Stiles and Bates, who made an extensive study of the process and product.³ The egg breaking season is from April 1 to October 1, the bulk of it being done in June and July. In a large establishment the eggs are graded by candling, and classified; and those to be used for drying are broken with a knife blade or on the edge of a metal cup, and the contents put in a vessel according to the grade of the egg. The egg material thus obtained is mixed, strained, and again mixed by a mechanical device, and is then ready for drying. There are two methods most used at present, either of which is satisfactory. By the instantaneous method, the eggs are sprayed into a heated chamber at a temperature of about 70°C. where they are immediately reduced to a fine powder. When the belt method is used, the egg material is dried on an endless belt made of zinc or of galvanized iron. Several factors affect the rate of drying in this process: the temperature, usually about 60°C, the length of the belt, and the rate of its revolution. One layer of egg, a thin film over the entire belt, is usually dried in one revolution. After drying several films in this way, the dried material is removed and placed in a finisher, where it is further dried at 37-40° for two or three hours. The product obtained by this process is very satisfactory from the sanitary point of view, and is more readily soluble than that prepared by the instantaneous method.

Healthfulness of Desiccated Eggs. As may be readily seen, there are possibilities of adulteration of the product by the addition of foreign substances, or by including eggs unfit for food. However, supervision by health officials has been put into effect so that a satisfactory product may be obtained. Dried eggs are frequently objected to on the ground that their bacterial content is so great as to render them unfit for food. Maurer discusses in detail the bacterial content of desiccated eggs in relation to their effect upon health, and his conclusions may be given

² Egg Trade of the U. S. M. H. Hastings, U. S. Dept. of Agr., Bur. of Animal Industry, Cir. 140.

³ Bacteriological Study of Shell Frozen and Desiccated Eggs. G. W. Stiles and C. Bates, U. S. Dept. of Agr., Bur. of Chemistry, Bul. 158.

here.⁴ He states that there is little or no danger to the consumer from poisonous decomposition products brought about by non-specific (putrefactive) bacteria. The specific, pathogenic bacteria present in desiccated eggs seem, at first, highly objectionable; yet, when we consider that the product is used entirely for cooking and baking at a temperature high enough to kill the organisms, it appears that danger of infection is less than from shell eggs taken as soft cooked, poached, or raw, which have not been subjected to a temperature high enough to destroy any bacteria present on the shells or in the eggs.

In connection with the healthfulness of desiccated eggs a word should be said concerning the vitamins contained. That both groups of these substances are present is shown by the experimental work of McCollum and Davis. A diet consisting of 80 per cent polished rice and 20 per cent desiccated eggs fed to rats gave "excellent growth and reproduction. This shows that the egg contains both fat and water soluble accessories."⁵ This is what one would expect since fresh eggs are rich in both of the so-called accessory dietary factors.

Cost of Dried Eggs. The price of dried eggs was at the time of these experiments (spring, 1917) from \$0.75 to \$1.00 per pound—varying with the manufacturer and also the amount purchased. At \$0.80 per pound the cost of the amount equivalent to a dozen eggs is \$0.2526. It is quite apparent that the product sold at \$0.80 per pound would be a comparatively inexpensive food, within reach of the vast majority of consumers, and would be a great improvement over the 40 to 50 or 75 cent eggs of our winter city markets.

At the present there is practically no retail demand for desiccated eggs, and consequently the product is difficult to obtain in the retail trade. They are on the market in wholesale quantities. If we are to control the prevalent waste of eggs, and thus effect a financial gain to both consumer and producer, the first step will be to create a demand for dried eggs. This can be accomplished only by placing the information before the housekeepers themselves, most of whom, we feel safe in saying, do not know that there is such a thing as a dried egg product. The creation of such a demand would make necessary a more extensive application of desiccation to eggs which would otherwise be wasted, and would therefore be not an apparent saving by merely making a change

⁴ Bacteriological Studies on Eggs. O. Maurer, Kans. Agr. Expt. Sta., Bul. 180.

⁵ Dietary Deficiencies of Rice. E. V. McCollum and M. Davis, *Jour. Biol. Chem.*, Vol. 23, p. 186.

of consumers, but would be a real saving effected by the preservation to a greater extent of the eggs now wasted.

The desiccated eggs used in this investigation are in a form suitable for retail trade, having been packed in one pound tin containers. Another sample recently obtained and therefore not analyzed with the others, is put up in a five pound cardboard container, and in this amount is entirely satisfactory for household purposes.

Practicability for Home Use. There are several points which may be mentioned in favor of the use of dried eggs in the home. At any season of the year the consumer may obtain a product of uniform quality. The product in tin or cardboard containers requires very little storage room, and no particular care, except that it be kept as cool as possible, since the higher temperature tends to lessen the solubility. The dried eggs are easily used both in the preparation of foods usually containing eggs and in serving alone as a protein rich food, replacing the expensive meat products.

Statement of the Problem. The problem which we have attempted to solve presents two phases: (1) the determination of the composition of the commercial samples of desiccated eggs, with a view to ascertaining whether or not the product is prepared from eggs alone, and how much must be used to be equivalent to one egg; (2) the determination of the efficiency of these commercial products in the preparation of foods containing eggs, as well as the flavor and appearance of the foods so prepared.

EXPERIMENTAL WORK

Analytical. The analytical problem consisted in determining the composition of three samples of commercial desiccated eggs which were available for this work. The constituents determined in each sample are: (a) protein, (b) ash, (c) moisture, and (d) fat. The methods used are those of the Association of Official Agricultural Chemists.⁶ The results of the analytical work are summarized in the following table.

From this table we are justified in concluding that the Chinese product⁷ is the only one of the three commercial samples examined which

⁶ Official and Provisional Methods of Analysis. U. S. Dept. of Agr., Bur. of Chemistry, Bul. 107.

⁷ Handled by Keith and Company, Boston.

is made entirely from eggs. The "Egg Powder"⁸ apparently contains almost 20 per cent of added material, part of which, at least, is in the form of sucrose, as, indicated by our qualitative tests, as well as the statement of the firm.⁹ The package states that the product contains "added sugar." The "Baker's Egg"¹⁰ apparently contains over 8 per cent of some added material, although the label states that "Baker's Egg is guaranteed to be simply fresh eggs (dried.)"

Composition of products

| PRODUCT | PROTEIN N x 6.25 | ASH | H ₂ O | FAT | TOTAL |
|-------------------|---------------------|-----------------|------------------|-----------------|-----------------|
| | <i>per cent</i> | <i>per cent</i> | <i>per cent</i> | <i>per cent</i> | <i>per cent</i> |
| Chinese eggs..... | 51.68 | 3.18 | 9.08 | 36.55 | 100.49 |
| Egg powder..... | 41.96 | 3.06 | 3.93 | 31.72 | 80.67 |
| Baker's egg..... | 39.70 | 3.25 | 7.56 | 40.95 | 91.46 |

In order to verify the results obtained in the above analyses, qualitative tests were applied to the egg products to show the presence of carbohydrates. The results are given below as follows:

Result of analysis for carbohydrate

| PRODUCT | STARCH | REDUCING SUGAR | SUCROSE |
|--------------|-------------|----------------|--------------------|
| Chinese eggs | Not present | Not present | Not present |
| Egg powder | Not present | Not present | Present |
| Baker's egg | Not present | Present | Present (probably) |

The addition of sugar to the desiccated eggs decreases the number of bacteria present, so that it may be used to conceal inferiority; also when used in the product to the extent of 10 per cent or more it must materially cheapen the output. For these reasons added sugar is to be looked upon with disfavor.

In calculating the amount of dried egg which is equivalent to one fresh egg, it seems best to base it on the protein content, since many of the purposes for which eggs are used, depend in large measure on the protein. On this basis one must use 13g. of Chinese Eggs, or 16g. of each of the "Baker's Egg" or "Egg Powder" to get an amount equal to that contained in an average sized egg. It should be remembered that the

⁸ Handled and distributed by Merrell-Soule Company, Syracuse, N. Y.

⁹ This company states that they use 10 per cent of sugar in the preparation of the "Egg Powder."

¹⁰ Prepared and distributed by the National Baker's Egg Company, Sioux City, Iowa.

protein content of fresh eggs as reported by Atwater and Bryant¹¹ varies from a minimum of 10 per cent to a maximum of 15.6 per cent and therefore the substitution of desiccated for fresh eggs cannot be very exact.

Application of the Product in Cooking. The practical problem consists in determining the extent to which dried eggs may be substituted for fresh ones in the preparation of typical foods; and also the attractiveness and palatability of the foods so prepared.

In using desiccated eggs in cooking a little more foresight is required since they are not ready for immediate use. The dried egg to be used (one slightly rounded tablespoonful for each egg) should be placed in a suitable vessel, with three tablespoons of water to each egg, and the whole allowed to stand, covered, for from one-half to three-quarters of an hour. If the mixture is stirred or beaten with a fork at intervals, it will go into solution more readily. The solution thus obtained resembles a whole egg removed from the shell with both white and yolk beaten up together, and it may be used as such.

Before discussing the use of desiccated eggs in cooking, it may be well to call to mind the essential points in egg cookery. When eggs are used alone as a protein rich food, the object in cooking is to coagulate the protein and develop the flavor, thus making them more palatable. Eggs are frequently used as a means of thickening mixtures of the custard type—either the soft or firm custards, and their use here depends upon the coagulation of the protein. In batters and doughs eggs are used to give rigidity to the cells of the product when it is cooked or baked, and here again the object is accomplished by the coagulation of the protein. Furthermore eggs may be used as a means of incorporating air or other gases which give lightness to the finished product. Eggs are used in two types of salad dressings, those which have a custard basis, and those in which the egg emulsifies the oil. The principle involved in the preparation of the first of the salad dressings is the same as that for custards. The oil dressing depends upon the emulsification of the oil by the egg.

Scrambled Eggs—Omelets. The dried eggs are very satisfactory for use in scrambled eggs or in the plain or French omelets in which yolk and white are not separated. The material is brought into solution as described above, and cooked just as one would cook the fresh eggs.

¹¹ Chemical Composition of American Food Materials. W. A. Atwater and A. P. Bryant, U. S. Dept. of Agr., Bur. of Chemistry, Bul. 128.

For serving as a protein rich food, in place of meat, a very good plan is to soak the eggs in skim milk rather than water, thus adding to the food value.

Custards. The dried eggs were used in making custards, both of the "soft" and "hard" type, using the ordinary proportions for custards. From the standpoints of appearance and consistency, both types of custards were very satisfactory; however, there is a marked difference in the taste between the fresh and dried egg custards. The latter are characterized by a peculiar taste which may be described as an "after-taste;" yet some individuals preferred the custard made from the Chinese dried eggs to the one made with fresh eggs.

The successful use of desiccated eggs in the preparation of custards suggests their further use in all sorts of desserts of the custard type or with a custard basis.

Muffins and Popovers. Muffins were made using the standard proportions and it was impossible to distinguish between those made from fresh and dried eggs. The same is true of popovers. Here again the successful use of the dried eggs suggests its further use in other soft doughs and batters.

Cakes. Four "butter" cakes, or cakes in which some kind of fat is used, were made, using the standard proportions of materials. Those made from the commercial dried eggs were compared with one made from fresh eggs and were equally satisfactory from the standpoints of appearance, texture, and flavor.

It is possible to make a fairly satisfactory sponge cake, using the dried eggs in place of the fresh. However, when this is done, one must use baking powder, since it is not possible to incorporate air in the egg white as is the case in making sponge cake from the fresh eggs. One half teaspoon of baking powder is needed as a substitute for the air incorporated in each egg white.

The desiccated eggs were also used in making cream puff shells, and the finished product compared favorably in every way with that made from fresh eggs.

Salad Dressings. Cooked salad dressings made according to the usual proportions, substituting dried for fresh eggs, were satisfactory. Several attempts were made to prepare good oil dressings with the dried egg products, but each attempt was unsuccessful. This seems to be due to the fact that, even with prolonged soaking and frequent beating, it is not possible to get the material sufficiently dissolved so that it

will permanently emulsify the oil. Only a temporary emulsion could be obtained, the oil separating out very quickly. This is not of great practical importance, since, as has been pointed out above, the bacterial content of the desiccated eggs is such as to render them unsafe for use without previous heating.

SUMMARY OF CONCLUSIONS

1. Satisfactory desiccated egg products may now be obtained.
2. According to the references quoted above, the bacterial content is not such as to prove detrimental to health when used in cooked foods.
3. Their use even at the present price will effect a considerable saving throughout a large part of the year. If the price can be lowered, dried eggs will become a comparatively cheap source of both fuel and protein.
4. The composition as determined by analysis shows that the commercial products examined are prepared from eggs, one without the addition of carbohydrate, and the other two with added sugar. The percentage composition of the three samples varies as follows: protein 39.70, 41.96, 51.68; ash 3.25, 3.06, 3.18; fat 40.95, 31.72, 36.55; moisture 7.56, 3.93, 9.08. Those samples in which the protein and moisture are low are the ones to which carbohydrate has been added, and the one which is very low in moisture content is the one in which the largest amount of sugar has been used.
5. The desiccated eggs may be used with highly satisfactory results in the preparation of practically all typical foods in which eggs are used.

"THE NEWER KNOWLEDGE OF NUTRITION"¹

MARY SWARTZ ROSE

This book is an exceedingly interesting monograph on the author's investigations in a field which has been generally engaging the attention of students of nutrition for the last decade. Such investigations have added some invaluable facts to our previous knowledge of dietary

¹ "The Newer Knowledge of Nutrition." By E. V. McCollum. The Macmillan Company, 1918, pp. 199. \$1.50.

essentials, enabling us to select food with more intelligence than ever before. It is highly important that the student and the teacher of home economics appreciate these new aspects of nutrition, and fortunate that Professor McCollum has embodied his own work in so delightful a treatise.

It has long been recognized that chemical composition alone furnishes no true criterion of the nutritive value of a food material, and this position is amply supported in the present work. Feeding experiments with purified food materials, both here and abroad, long since revealed that proteins, fats, carbohydrates, ash constituents and calories did not provide the last word in the science of nutrition, and led eventually to the discovery of vitamins. The way in which these substances have been discovered and their rôle in diet, are briefly but clearly explained in the book under consideration.

To Professor McCollum we owe a very clear formulation of the essentials of an adequate diet. In his own words:

"The diet must contain, in addition to the long recognized dietary factors, viz.: protein; a source of energy in the form of proteins, carbohydrates, and fats; a suitable supply of certain inorganic salts; two as yet unidentified substances or groups of substances. One of these is associated with certain fats, and is especially abundant in butter fat, egg yolk fats, and the fats of the glandular organs such as the liver and kidney, but is not found in any fats or oils of vegetable origin. The second substance or group of substances of chemically unidentified nature is never associated with fats or oils of either animal or vegetable origin. It is widely distributed in natural foods, and can be isolated in a concentrated, but not in a pure form, from natural foodstuffs by extraction of the latter with either water or alcohol."

This book gives in interesting detail the results of some of Professor McCollum's very extensive investigations regarding the place of common foods in the diet, and points out the close resemblance in dietary properties of food materials derived from a common source. For example, studies on white corn flour, rolled oats, rye, barley, Kafir corn, millet and flaxseed, peas, navy and soy beans, demonstrate that foods of this type tend to be deficient in the quality of their proteins; in calcium, chlorine, sodium; and in the fat-soluble vitamin. Hence the author concludes that it is not possible to secure appreciable growth in young animals fed exclusively upon seed products as the sole source of nutrition.

It is shown further that leaves and seeds together make a much better food than seeds alone, the combination being utilized fairly satisfactorily for animals, inasmuch as the leaf is especially rich in those mineral elements in which the seed is poorest, and contains much more of the fat-soluble vitamins than any seed, and proteins which appear to supplement and enhance the value of the seed proteins with which they are combined. "The leaf supplements therefore all the nutritive deficiencies of the seed, but not necessarily in a highly satisfactory manner.

. The freer the leaf is from the function of storage tissue, the more intensified will be its leaf properties as a food. The fleshy leaves tend to have in some degree the dietary properties of the seed, and stand intermediate between the leaves which are thin and dry easily and the seed in this respect." Roots and tubers, being storage organs, are similar to seeds in their dietary properties.

A chapter is devoted to a discussion of the vegetarian diet, and shows that while very carefully selected combinations of seed and leaf will secure fairly good nutrition, omnivora do not attain the optimum growth on diets derived entirely from vegetable sources. We are indebted to Professor McCollum for abundant evidence that one of the tests of an adequate diet is its ability, not only to support the adult animal in health, but to enable it to produce a second generation as vigorous as the first, and this second generation in its turn to produce equally vigorous offspring. Thus our standards of food for good nutrition have been distinctly raised, as the far-reaching effects of bad feeding have been impressed upon us.

The preeminent value of milk and the minor importance of meat are brought out in the chapter on Foods of Animal Origin. Ever since Hopkins found that small quantities of milk had a remarkable effect on the well-being of animals fed otherwise on purified food materials, and Osborne & Mendel discovered that protein from milk made efficient for growth diets otherwise unsuccessful, the dietary properties of milk have been diligently investigated. Every one familiar with this work must agree with the author in ranking milk as our most important foodstuff, "because the composition of milk is such that, when used in combination with other food-stuffs of either animal or vegetable origin, it corrects their dietary deficiencies."

Diseases associated with faulty diet (beri-beri, xerophthalmia, scurvy, pellagra, and rickets) are interestingly discussed and some very practical suggestions for investigation in this field of nutrition are made.

One of the most suggestive chapters is that on "The Nursing Mother as a Factor of Safety in the Nutrition of the Suckling," in which the author shows the great importance of an adequate diet and especially of liberal amounts of milk for the lactating woman.

There are many interesting considerations in the chapter on the planning of the diet, but one is tempted to take some exception to the statement that it is fallacious to compare foods on the basis of money value, since a very large proportion of the population is forced to select foods in the light of their cost. It would seem reasonable to say that the food which will give the most dietary essentials for the money spent is the cheapest food. Since energy makes the largest demand for food, and since the other dietary factors can in the main be secured along with the energy, in any valuation of food a large allowance must be made for its energy yield. In the words of Armsby:

"While it is true that a due supply of mineral matter, proteins, and vitamins in the food is equally essential, it is not, from the present point of view, equally important, since comparatively slight modifications in a diet supplying sufficient energy can ordinarily remedy deficiencies in this respect."

Sherman, in "Chemistry of Food and Nutrition," pp. 391,396, has proposed a very interesting method of determining the economic value of foods of different types which the student of nutrition will do well to consider carefully. Such an estimation will show, concretely, what Professor McCollum himself points out, that milk, while relatively high in fuel value, protein, mineral constituents (except iron), and vitamins, is a comparatively cheap food, even at its present price. So, too, soy beans and peanuts, which among seeds are high in fuel value and protein, relatively high in mineral constituents and vitamins of both types, will take less supplementing than other seeds and so may be regarded as cheaper than other foods of their class whose price per pound is the same.

It would give the beginner in this field a better conception of the scientific work which has led to the conclusions so succinctly stated, if, while reviewing his own work, Professor McCollum had put in more references to the work of his contemporaries along the same lines.

This is to be regarded as an epoch-making book in the field of popular literature in nutrition, and should be widely read.

WHAT IS EXPERIMENTAL COOKERY?

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Needless to say, the course which has been developed so well in some of our colleges and universities is *not* fancy cookery; nor is it a random groping about for successful recipes. Rather, it concerns itself with the patient development, one by one, of the principles upon which the successful recipe (consciously or unconsciously) is based.

In this fundamental study of underlying principles, the following points are to be carefully observed:

1. All of the variants which enter into the problem must be recognized and prescribed. It is usually the case that they are not entirely understood in the beginning, but their list must be completed before the work is finished. It is the large number of these variants, in many cooking processes, which sometimes makes standardization so difficult. To illustrate with a fairly simple case: suppose one is studying the amount of fat taken up by an egg fried in bacon fat. Conceivably the list of variants would include size, composition, and condition of egg (particularly proportion of yolk and richness of yolk, since fat in the material fried appears to attract and hold a large proportion of fat in the process of frying); composition and condition of the fat; initial temperature of the fat when the egg is put in; temperature to which the fat falls after eggs are added (dependent on the number of eggs fried simultaneously); rate at which this temperature rises during the cooking process (dependent in part upon the rate at which heat is applied, in part upon the material of which the utensil is made, as well as upon other factors); depth of fat and extent to which it covers the egg; amount of surface which the egg exposes to the fat, whether in thin or thick layers; length of time of frying; details of manipulation (whether egg is turned, or basted, or drained, etc.). All of these conditions, so far as possible, should be noted, and so described that it would be possible for others, who might at sometime wish to repeat the experiments, to work upon the same basis by following the account of what was done.

2. In an experiment to determine the effect of any given factor, all of the variants must be stabilized *except that one*: e.g., if it be desired to find the effect of soft-cooking or hard-cooking an egg upon the amount of fat absorbed, pains must be taken to cook two similar eggs in the same

skillet, with the same amount and kind and temperature of fat, spreading them in exactly similar shape and form, keeping the temperature uniform after the stage at which the soft egg comes out, and handling them in exactly the same way in every respect except that the second egg is turned over and remains longer in the fat. Each egg then serves as a "control" or basis of comparison for the other.

In work with batters and doughs, all fats, flours, and meals should be provided in sufficient amounts so that one lot only will be used throughout the whole set of experiments, since there is very considerable variation among different samples of such commodities.

3. All materials must be measured by weight, as a general rule. Even carefully trained workers are not able always to measure exactly duplicated cups of flour or cornmeal, tablespoonfuls of milk, or teaspoonfuls of soda; the size of eggs, potatoes, lemons, apples, etc., varies considerably; $\frac{1}{4}$ cup of butter as ordinarily measured in a cup may vary anywhere from 3 to 5 ounces, or still more widely.

4. The end point sought must be a sharp one and one capable of exact determination if possible. In the instance given above the weight of fat absorbed is determined with a fair degree of accuracy by weighing the fat before and after the egg is cooked. Thus the "end-point" is a weight, and is an absolutely definite and distinct determination. But often this is not the case in experimental cooking; e.g., in ascertaining the optimum amounts of various fats to be substituted in cake-making for 2 ounces of butter, our end-point determination is the comparative "richness" of two cakes—a matter of judgment, in which the discriminative powers of individuals vary greatly. Wherever possible, however, such judgments must be supplanted or at least supplemented by measurements of a purely objective character; e.g., visual judgment as to which of 2 loaves of bread has risen more may be replaced by exact measurements of volume and computation of specific volume or volume per gram or per pound.

5. All tests and trials of any given factor should be repeated, at least in duplicate, and duplicates should check within 2 per cent, unless one is forced to deal with measurements in which highly variable constituents are large factors, as, for example, the water and fat content of milk. These are so far from being uniform, as to cause considerable fluctuation in the determination of its calorific value and of some other "constants." In such a case as this, the tolerance may need to be increased, say to 5 per cent.

6. The method used should be checked in all possible ways, and this often puts a strain on the experimenter's resourcefulness and ingenuity. Bomb calorimeter determinations may be re-inforced by chemical analyses for protein, fat, and carbohydrate. Fat absorption into fried food may be determined by loss of fat from the original stock of fat, or by fat analyses of the food material before and after frying. All available literature, both American and foreign, should be searched for the results of other investigators engaged upon similar work; the student should familiarize herself with the various indexes and files likely to contain material useful to her.

7. Generalizations should be made from as much data as possible. The variation in many products and materials from one locality or season to another, the diversity of manipulation among individuals, must be explicitly taken into account whenever experimentation can be made to include all these and other elements or causes of variation. Thus is a really valuable and "practical" generalization patiently built up.

8. An important detail, sometimes overlooked by beginners, concerns the necessity for keeping permanently the original records of each day's work made at the time the work is done. Suppose that one is working for increased volume of loaf in bread making, trying to duplicate, in that respect, the results which some commercial bakers get. In a long series of records, very likely a few stand out as unaccountably high or low. One needs then to be able to turn back to the sheet which records that day's work, upon which any irregularity of procedure or peculiarity in results will be noted, such as could not be included in tabulated summaries. If the observer is sufficiently alert to everything that happens and the record sufficiently faithful, there is then a good chance to discover some new and hitherto unsuspected variant which may prove to be of importance.

9. Aside from the difficulty of establishing a sharp end-point, perhaps the most vexing source of difficulties in many problems of experimental cookery is in analyzing and standardizing the effect of various sorts of household manipulation. It would seem, for instance, that results obtained in baking one loaf of bread of average size should be applicable to a batch of four loaves, if all ingredients be multiplied by 4, and the procedure be the same; yet this is not necessarily the case. Those who have baked experimental loaves of a fairly stiff barley and wheat dough (25 per cent barley or more) have (in some cases at least) observed that when

the large batch is mixed by the same recipe it seems at first impossible to knead in all of the flour; i.e., the softening effect of kneading upon the barley dough becomes apparent much sooner in case of the small batch than in case of the large one, because the manipulation of the small mass is relatively more thorough, in equal lengths of time.

The following form illustrates an attempt to record in tabular form most of the variables encountered in judging and cooking dried vegetables. Further analyses of cooking processes from the same standpoint will be presented at some future time.

Form for report on cooking of dried vegetables or fruits

| DESCRIPTION OF VEGETABLE | DESCRIPTION OF DRYING AND STORING PROCESSES | WEIGHT AND MEASURE OF DRIED VEGETABLES | AMOUNT AND TEMPERATURE OF H ₂ O FOR SOAKING AND COOKING | TIME SOAKED AND COOKED |
|---|--|--|--|--|
| Irish potatoes; Early Rose Standard no. 1; dug in July; dried in November; dry weight is 40 per cent of raw | Sliced $\frac{1}{4}$ inch; blanched 5 minutes in boiling water; dried 8 hours; sealed in tin | 2 oz. or $\frac{1}{2}$ cup | 1 cup, 15°C. Cooked in same water | Soaked 22 hours; cooked 10 minutes |
| Spinach; no. 3233; dry weight is 8 per cent of raw | Cut in slices; dried raw 2 hours; 140° to 160° F. May 7, 1918; paraffined paper bags | 0.1875 oz. | $\frac{1}{2}$ cup; boiling at start | Soaked 2 hours; cooked in double boiler 20 minutes |

| WEIGHT AFTER SOAKED AND COOKED | SOAKING OR COOKING H ₂ O DISCARDED | ADDITIONAL COOKING | NUMBER AND WEIGHT OF SERVINGS | DATE OF COOKING TEST REMARKS |
|--|---|--|-------------------------------|---|
| Soaked, 5 oz.; cooked, 5 $\frac{1}{2}$ oz. | No, boiled away | Added 1 $\frac{1}{2}$ per cent salt;* 10 per cent onion;* slightly browned | 2 servings, 2 oz. each | February 8, 1918; a little pastry when potatoes are mashed; fairly good flavor when cooked as above |
| 2 oz. | No, mostly absorbed | Added 1 $\frac{1}{2}$ cups milk; 3 $\frac{1}{2}$ T. flour; 3 $\frac{1}{2}$ T. oleo; salt, pepper | 3 servings, 6 oz. each | October 12, 1918; almost tasteless; (had been dried 5 months; was delicious when 3 months dried) |

* Computed on basis of weight of cooked vegetable.

The above form was designed with a view to recording the ease of cooking and the palatability of dried products when cooked by various

methods, and making possible the calculation of dietetic values of the cooked vegetable as eaten.

1. The nature of the cooking process should be plainly indicated and taken into account when considering either favorable or unfavorable impressions described by the testers who sample the finished product. For example, a dried potato, which has fallen off in flavor considerably, may yet be made into a fairly palatable or even attractive dish by the skillful addition of seasonings and accessories, such as cream sauce, or cheese and buttered bread crumb coverings; whereas its inferiority would be evident to all if it had been mashed with a little milk or butter, in the usual fashion.

2. Is the cooked dried vegetable, as served, dietetically the equal of the cooked fresh vegetable with respect to (a) calories, (b) protein, (c) mineral salt content, (d) vitamine, or anti-scorbutic content? In order to answer the first three of these questions, one must keep strict account of changes in water content (as indicated in the form here suggested) and also of any extraction of soluble nutrients by discarding the water in which these products are soaked or cooked.

3. Is there a progressive deterioration of flavor, color, and cooking qualities, as the dried products age? Is such deterioration (if any) independent of methods used in drying and storing the product? Is it possible to keep dried vegetables in prime condition, in the home, for a period as long as 8 months?

4. Are most dried vegetables as satisfactorily cooked by plunging them at once into boiling water, without any soaking whatever, as by more usual methods?

CENTIGRADE SCALE COMPARED WITH FAHRENHEIT¹

RANGE, -29°C. (-20°F.) TO 309°C. (588°F.)

Illustrations. To convert 178°C. to Fahrenheit scale: Find 17 in the extreme left-hand column, proceed on this horizontal line to the column headed 8; 352°F. corresponds to 178°C.

Similarly, to convert 3°F. to the Centigrade reading: Find 3 in the series of Fahrenheit readings, run horizontally along this line to the

¹From the Experimental Laboratory, Office of Home Economics, U. S. Dept. of Agr.

left, and it will be seen that -1 begins the desired number; at the top of the column in which 3°F. is placed, the second figure, 6, will be found. 3°F. corresponds to -16°C.

| $^{\circ}\text{C.}$ | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | $^{\circ}\text{F.}$ | $^{\circ}\text{F.}$ | $^{\circ}\text{F.}$ | $^{\circ}\text{F.}$ | $^{\circ}\text{F.}$ | $^{\circ}\text{F.}$ | $^{\circ}\text{F.}$ | $^{\circ}\text{F.}$ | $^{\circ}\text{F.}$ | $^{\circ}\text{F.}$ |
| -2 | -4 | -6 | -8 | -9 | -11 | -13 | -15 | -17 | -18 | -20 |
| -1 | 14 | 12 | 10 | 9 | 7 | 5 | 3 | 1 | 0 | -2 |
| -0 | 32 | 30 | 28 | 27 | 25 | 23 | 21 | 19 | 18 | 16 |
| 0 | 32 | 34 | 36 | 37 | 39 | 41 | 43 | 45 | 46 | 48 |
| 1 | 50 | 52 | 54 | 55 | 57 | 59 | 61 | 63 | 64 | 66 |
| 2 | 68 | 70 | 72 | 73 | 75 | 77 | 79 | 81 | 82 | 84 |
| 3 | 86 | 88 | 90 | 91 | 93 | 95 | 97 | 99 | 100 | 102 |
| 4 | 104 | 106 | 108 | 109 | 111 | 113 | 115 | 117 | 118 | 120 |
| 5 | 122 | 124 | 126 | 127 | 129 | 131 | 133 | 135 | 136 | 138 |
| 6 | 140 | 142 | 144 | 145 | 147 | 149 | 151 | 153 | 154 | 156 |
| 7 | 158 | 160 | 162 | 163 | 165 | 167 | 169 | 171 | 172 | 174 |
| 8 | 176 | 178 | 180 | 181 | 183 | 185 | 187 | 189 | 190 | 192 |
| 9 | 194 | 196 | 198 | 199 | 201 | 203 | 205 | 207 | 208 | 210 |
| 10 | 212 | 214 | 216 | 217 | 219 | 221 | 223 | 225 | 226 | 228 |
| 11 | 230 | 232 | 234 | 235 | 237 | 239 | 241 | 243 | 244 | 246 |
| 12 | 248 | 250 | 252 | 253 | 255 | 257 | 259 | 261 | 262 | 264 |
| 13 | 266 | 268 | 270 | 271 | 273 | 275 | 277 | 279 | 280 | 282 |
| 14 | 284 | 286 | 288 | 289 | 291 | 293 | 295 | 297 | 298 | 300 |
| 15 | 302 | 304 | 306 | 307 | 309 | 311 | 313 | 315 | 316 | 318 |
| 16 | 320 | 322 | 324 | 325 | 327 | 329 | 331 | 333 | 334 | 336 |
| 17 | 338 | 340 | 342 | 343 | 345 | 347 | 349 | 351 | 352 | 354 |
| 18 | 356 | 358 | 360 | 361 | 363 | 365 | 367 | 369 | 370 | 372 |
| 19 | 374 | 376 | 378 | 379 | 381 | 383 | 385 | 387 | 388 | 390 |
| 20 | 392 | 394 | 396 | 397 | 399 | 401 | 403 | 405 | 406 | 408 |
| 21 | 410 | 412 | 414 | 415 | 417 | 419 | 421 | 423 | 424 | 426 |
| 22 | 428 | 430 | 432 | 433 | 435 | 437 | 439 | 441 | 442 | 444 |
| 23 | 446 | 448 | 450 | 451 | 453 | 455 | 457 | 459 | 460 | 462 |
| 24 | 464 | 466 | 468 | 469 | 471 | 473 | 475 | 477 | 478 | 480 |
| 25 | 482 | 484 | 486 | 487 | 489 | 491 | 493 | 495 | 496 | 498 |
| 26 | 500 | 502 | 504 | 505 | 507 | 509 | 511 | 513 | 514 | 516 |
| 27 | 518 | 520 | 522 | 523 | 525 | 527 | 529 | 531 | 532 | 534 |
| 28 | 536 | 538 | 540 | 541 | 543 | 545 | 547 | 549 | 550 | 552 |
| 29 | 554 | 556 | 558 | 559 | 561 | 563 | 565 | 567 | 568 | 570 |
| 30 | 572 | 574 | 576 | 577 | 579 | 581 | 583 | 585 | 586 | 588 |

FOR THE HOMEMAKER

VISITING HOUSEKEEPING WITH THE JENSONS

RUTH BOWEN

Visiting Housekeeper, Associated Charities, Lansing, Michigan

A father twenty-two, a mother twenty, and five babies under four—such was the personnel of the Jensons when they first became known to the Visiting Housekeeper. Four boys—John, a solemn youngster of three and a half, seemingly already weighed by his responsibilities as eldest brother; Peter, an irresistible curly head of two; the twins, just past one; and the new baby sister, Olga. They lived, all seven of them, in a tiny two-room tar paper shanty measuring altogether only ten by fourteen feet. The three small windows were nailed shut in the fall and taken out for the spring house-cleaning. Every drop of water used had to be carried a long half block up hill.

Mr. Jenson, a Scandinavian by birth, could neither read nor write, even in his own language. He had a good work record as an unskilled laborer, and was really very anxious to do the best thing for his family. Low wages and the seasonal nature of his occupation (street graveling, coal hauling, and similar work) causing periodic unemployment, had made the task of providing for his rapidly growing family one that required much more careful management than he could give. In accordance with the old custom of his country, he handled the family pocket-book. His wife often did not know the amount of his wages. Mrs. Jenson, an American girl, had left the grade school at fifteen to be married. She knew nothing of the simplest rudiments of the household arts although she was very willing to accept instruction. All the children were undernourished, the twins particularly so. Although past a year old they had made no attempt to creep or walk, partly because they had never had the right sort of food for developing the requisite bone and muscle, and partly because there was not room on the floor of the shanty for them to learn.

The family had been referred to the Associated Charities for visiting housekeeper care by the visiting nurse who had given nursing care at the time of the baby's birth. They had not previously been known to any social agency in the city.

The Visiting Housekeeper's most natural entrance into the family was through the need of a supervised diet for the children. With the coöperation of the visiting nurse they were taken to the Children's Clinic. There it was found that the trouble was entirely one of malnutrition, and a special diet, including milk and oranges, was prescribed for them. With oranges a dollar a dozen, diamonds would have been about as easy for the father to provide. Milk also, even the two quarts and a half a day which was the minimum for the five babies, was a heavy burden for Mr. Jenson who was experiencing one of his frequent periods of unemployment, and who shared the popular working-class prejudice that milk is a luxury.

A half dozen oranges a week were secured from one source, three quarts of milk daily from another, and the visiting housekeeper went in to teach the planning and preparation of the simple menus. Mrs. Jenson learned to bake her own bread, to prepare oatmeal, to bake apples, and to prepare other inexpensive and wholesome food. Everything was first prepared under supervision of the visiting housekeeper in the home, then Mrs. Jenson was urged to do the work independently. She followed instructions faithfully and learned readily, and soon became able to use a printed recipe without supervision. The children started to gain, but any normal progress was impossible under the housing conditions.

When the question of moving into a better house was broached, the whole problem of finances came up. Mr. Jenson was buying the small lot where he lived for ten dollars a month, but was back eight months in his payments. It would not have been worth while to try to make up these payments, as the lot was undesirable and the house impossible. Through the efforts of the visiting housekeeper a suitable five room cottage was found in a desirable neighborhood. It could be bought on contract for \$1300.00, with a cash payment of \$100.00 and a monthly payment of \$12.00.

Besides the \$80.00 for back rent the Jensons owed \$109.35 at twelve different credit and furniture stores. They had with sublime optimism purchased goods at one store after another, making the initial payment and perhaps two or three subsequent ones; then, under pressure of other needs, they allowed the payments to lapse. They were not in any sense

professional "dead beats" but the twin evils of unlimited credit and lack of financial sense had involved them almost hopelessly in debt. Mr. Jenson's wages had been garnisheed once, and other creditors were threatening. Some financial backing must be found for the family if they were to get on their feet again. The following plan was finally worked out. The Associated Charities advanced \$100.00 for the first payment on the new house as a loan without interest. In return, Mr. Jenson made an assignment of his entire wages to the Associated Charities, to be handled under the supervision of the visiting housekeeper. This protected him against further garnishee, served as a steadying influence, and also gave the Associated Charities some security for their loan.

Fortunately at about this time Mr. Jenson secured a steady job paying \$3.00 a day, which later was increased to \$4.00. A budget was worked out providing for food, clothing, and sundries for the family. A copy of the assignment was taken to the employer by the visiting housekeeper, and through his cooperation the amount estimated as necessary for those items was paid to Mr. Jenson and the balance to the Associated Charities to be used by the visiting housekeeper for rent and back debts. With this plan as a background, the visiting housekeeper interviewed the creditors who with almost uniform readiness accepted her promise that the debts would be paid pro rata and as fast as possible. The former landlord on hearing the story cancelled \$40.00 of the \$80.00 due him. Another creditor, who had started garnishee proceedings agreed to suspend them for a reasonable length of time.

The first of April the Jensons moved into their new home. To Mrs. Jenson its two greatest charms are that it has two bedrooms and that the pump is right at the back door. Under more favorable influences she is developing into a fairly efficient housewife. Last summer she bought a second hand sewing machine for \$2.50. After much effort and equally patient instruction, she has achieved two pairs of rompers, a dress, and a petticoat. Now that she has mastered the rudiments of patterns, scissors, and machine, her progress promises to be more rapid.

In the six months since the present financial arrangement went into effect Mr. Jenson has met every month the \$12.00 payment on his house, has repaid \$21.00 of the \$100.00 loaned him by the Associated Charities, has paid \$28.91 on his back debts and has contributed \$5.00 to the Red Cross War Fund. He has changed jobs several times and is now earning \$19.00 per week. The assignment while still nominally in force, has not been sent to his present employer, as it seems wiser to

allow Mr. Jenson to draw his entire pay check and pay a stated sum weekly to the Associated Charities.

Best of all, with plenty of fresh air and plain wholesome food the twins, and the small baby sister as well, have learned to walk, and all five babies are developing into healthy childhood. The family has now been under visiting housekeeper care for a little more than a year and promises to need supervision for at least that much longer. During this period visits numbering as many as eight and ten a week have been made, including one or two night visits, necessary because Mr. Jenson can be seen only after working hours. Almost every phase of visiting housekeeping supervision has been needed. A budget was planned for the family. Accounts have been kept and expenditures supervised. Mrs. Jenson has been taught cooking and sewing by personal instruction in her home. She is also a member of a neighborhood sewing class, meeting weekly. The visiting housekeeper has helped Mrs. Jenson plan her menus and her grocery order, and has gone shopping with her.

Because of Mr. Jenson's lowered wages, the need for buying fuel, and the higher cost of food, the amount now handled by the visiting housekeeper provides only for rent and insurance; but later in the spring when Mr. Jenson can get road work at \$4.00 and \$4.50 a day, he will resume payments on his back debts. He is so well pleased with his progress that he has asked the visiting housekeeper to continue her friendly supervision even after his debts have been paid, and to help him start a savings account.

WISE SPENDING

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Wise spending implies the balancing of all needs and of all means of meeting these needs and, after balancing needs against means, spending in such a way as to meet the most urgent wants, even if lesser ones have to be left unsatisfied. In essence it means a sort of budget making. When a family, city, or state makes a budget, what it does is to take a comprehensive view of both needs and income. It is important that not all of the income be spent on the first needs that may occur lest other

more urgent needs appear and no funds be left to meet them. Thought must be taken that available income is applied intelligently and wisely to cover most important needs and to satisfy them somewhat in proportion to their relative importance.

Perhaps the most important and difficult problem in connection with wise spending is to realize the relative importance of future as compared with present needs. It is very foolish to neglect the urgent necessities of today for the petty wants of the morrow, but only misers and a few other people need very much persuasion to induce them to take care of the present. But where most of us are foolish or unwise is in satisfying petty wants of the present rather than saving in order that urgent needs of the future may be met.

Saving, *per se*, is of no special advantage. When people save instead of spend, what they really do is to save for a chance to spend for something worth more later; so in the last analysis everything is spent. This means that it is worth while, even in a "savings campaign," to talk more about spending than about saving.

Since the world is so large that it is difficult for us to see it as a whole, it may make matters clearer, perhaps, if we assume the world to be a small community, a sort of Swiss Family Robinson community on an Island. If this community had a certain amount of wheat, sugar, or clothing, it would be foolish to use none of it today and save it all for the last of the year. On the other hand, it would be just as foolish to use all of it at once and have nothing for the remaining months. The wise thing to do would be to estimate the needs throughout the year and to distribute the supplies over its entire length. The more the people of this community can produce during the year in addition to the stores they had on hand at the beginning, the more they can use in the present, and also the more they will have for each day of the year. The more risks there are, whether of bad seasons, hurricanes, accidents, sickness or other misfortunes, the less the amount that should be used now and the greater the amount that should be saved for later parts of the year.

We may imagine this community to be a very primitive one, without any capital, or with a small amount of capital, which it wants to increase. The only way to do this would be to devote only part of its energies to the producing of goods that would be consumed currently and to devote the other part to the building of houses, machines, or railroads, which would not be consumed currently, but which in time

would result in the production of a much greater quantity of goods for consumption; in other words, the sacrifice of some goods in the present would result later in the making of instruments which would yield many times as many commodities as were sacrificed earlier. That is, the building up of capital requires taking thought for the morrow as well as for the present, wise spending in the present, and the saving of what can be most easily dispensed with now for the sake of a larger product later. This is necessary in order to produce in quantity and cheaply, in order to make it possible to have a large population, in order to give opportunity for specialization, in order to give time for certain classes to have leisure enough to think and develop science, in short, in order to have what we moderns call civilization and especially to have a progressive civilization. This is elementary and understood by most of us, but we do not always appreciate it.

Our needs and wants are indefinitely great, both in number and quantity. It is absolutely impossible to satisfy all of them. The best that we can do is to satisfy the most urgent and eliminate the lesser ones. If we satisfy the latter, it will mean the sacrificing of the greater for the lesser. This, of course, means that one must have a philosophy of life in order to decide what is most worth while and what can be eliminated. This brings us to the answer of the question which many people have asked,—How may I determine what is foolish and what is wise expenditure? It depends upon one's judgment of what is worth while and of the extent of one's means available for the satisfaction of wants. The decision, of course, must consider not only the individual's needs and desires but also his duties to his family and to society at large. But we must even go a step further, a society cannot allow an individual to do what seems most worth while to him if the doing of those things injures society. Not only the murderer and thief must be taught better ways or be eliminated, but also those whose acts are non-social in other ways must be encouraged to adjust their work, and to so satisfy their wants that what they do shall be in harmony with the interests of society rather than contrary to them.

Foolish spending is one of the things which is exceedingly non-social; wise spending is best for the interests of the individual and also for the interests of society. It is the function of the savings campaign to convince the great mass of American people of this fact, and to use moral suasion, and to bring to bear the mighty force of public opinion so that they may align themselves in such a way that their interests and actions

will harmonize with the interests of the people as a whole, so that they will spend wisely rather than foolishly. In other words, the campaign is to help make every citizen of the United States a good citizen.

MILK: ITS RELATION TO RACE CHARACTERISTICS

It is of special moment at this time to emphasize the importance of the dairy industry in its relation to the public health. Mankind may be roughly classified into two groups. Both of these have derived the greater part of their food supply from seeds, tubers, roots, and meat, but have differed in respect to the character of the remainder of their diets. One group, represented by the Chinese, Japanese, and the peoples of the Tropics generally, have employed the leaves of plants as almost their sole protective food. They likewise eat eggs and these serve to correct their diet. The other group includes the peoples of Europe and North America and a few others. These have likewise made use of the leaves of plants, but in lesser degree, and have, in addition, derived a very considerable part of their food supply from milk and its products.

Those peoples who have employed the leaf of the plant as their sole protective food are characterized by small stature, relatively short span of life, high infant mortality, and by contented adherence to the employment of the simple mechanical inventions of their forefathers. The peoples who have made liberal use of milk as a food, have, in contrast, attained greater size, greater longevity, and have been much more successful in the rearing of their young. They have been more aggressive than the non-milk using peoples, and have achieved much greater advancement in literature, science, and art. They have developed in a higher degree educational and political systems which offer the greatest opportunity for the individual to develop his powers. Such development has a physiological basis, and there seems every reason to believe that it is fundamentally related to nutrition.—*The Newer Knowledge of Nutrition* by E. V. McCollum.

INSPECTION VS. EATING

Montague Glass keeps up with the times; therefore home economics must have "arrived," for Abe and Morris discuss it in connection with dramatic criticism in a recent article in a very amusing way.

"Well, I'll tell you," Morris said, "while I admit that the theayter cricket is smart fellers and knows all about the rules and regulations for writing plays y'understand, so that they can tell at a glance during the first performance if the audience is laughing in violation of what is considered good play construction or crying because the show is sad in a spot where a play shouldn't ought to be sad if the man who wrote it had known his business, y'understand, still at the same time theayter crickets is to me in the same class with those here diet experts. Take a dinner which one of them diet experts approves of, Abe, and the food is O.K., the kitchen is clean, the cooking is just right as to time and temperature of the oven, there's the proper proportions of water and solids, and, in fact, it's a first-class, a-number-one meal from the standpoint of every person which has got anything to do with it, excepting the feller which eats it, and the only objection he's got to it is that it tastes rotten."

"And that would be quite enough to put a restaurant out of business if it served only good meals according to the opinion of diet experts, Mawruss, because diet experts don't buy meals, Mawruss, they only inspect them," Abe commented.—*Washington Star* (Copyright, 1918, by McClure Syndicate).

AN ODE TO HEALTH

Health of itself makes life a perpetual joy. Nothing daunts, nothing overawes, nothing discourages and nothing overpowers the man and woman possessed of health. Health means not only vigor and energy of body, but also clarity and strength of mind; purity and beauty of soul. The healthy person dominates life instead of allowing life to dominate him. To him work is a joy. He regards obstacles as but opportunities for testing his strength. He hardly knows what weariness is. He never experiences exhaustion. Merely to grasp his hand is a pleasure. Health supplies the courage, the aggressiveness in life. Without health one is bankrupt regardless of what his financial capital may be. He becomes a cipher in the world of real men and women. If you have health, then, friends, cherish it, guard it and treasure it as you treasure life, for out of it are the issues of life.—*Bulletin Indiana State Board of Health*.

EDITORIAL

A LETTER FROM THE SAVINGS DIVISION OF THE TREASURY DEPARTMENT TO THE AMERICAN HOME ECONOMICS ASSOCIATION

The American Home Economics Association, through its Council, has offered to coöperate in the Thrift Campaign undertaken by the War Savings Division. The Association has asked in what ways home economics workers in the class room, the home, or on the platform can put over thrift ideals and methods, and reach the results for which the Government is working.

It is evident that there are opportunities to make this year the beginning of the golden age of wise living; that such opportunities are especially open to a body of people who for many years have been teaching principles that are directly applied to this campaign of thrift.

This letter is written to suggest a few of the specific ways in which those trained in home economics may help in putting before every home and every individual the kinds of thrift that are worth while in daily living; that will give them an idea of proportionate costs, and show them the relation of individual saving to the prosperity of the community and the stability of the nation.

Those of you who are teaching will, of course, work first of all with your own students. See that the thrift program is presented to them. If you are an elementary teacher, this may be done by following some of the suggestions sent out by the Savings Division in National School Service; using fifteen minutes a week in giving a thrift lesson; introducing some thrift problems in the arithmetic class; using thrift stories as supplementary reading; asking the children to plan posters, or to think out thrift slogans; or even giving a simple thrift play. If you are training teachers, offer a short course this summer that will show normal students how to teach even the elementary school child a spending plan, and that will use the child to reach the home with ideals of thrift and practical methods of wise spending and saving.

Urge the department of general economics in your institution to pay especial attention this year to the discussion of wise spending and the theory of savings. Ask to have at least one or two public lectures given during the summer term, perhaps by a local banker or business man, so that every student may have an opportunity to hear what safe investment means.

Start a thrift bureau for students. Keep it open an hour a day. Train one of your own students to answer the simpler questions. Take care of the more difficult ones yourself. Students will bring problems from home, giving you an opportunity to help in the solution of very real and immediate problems.

If the student thrift bureau is successful and conditions warrant it, find some one who will help you start a thrift information bureau for the community in which you live. Suggestions in regard to the method of conducting such a bureau may be obtained from the Savings Division.

Teach simple ways of keeping accounts. Do not lay on the housekeeper too great a burden. An account for a month will give some basis for a budget plan.

Make your own spending plan; you can hardly ask of others what you do not find time to do yourself. You have probably found simple and quick ways of getting at what you want to know. Show others how to do it.

Suggest that the woman's club to which you belong study for part of next year's work "Ten Lessons in Thrift" that will soon be issued by the Savings Division. Leaflets on Household Thrift are in preparation by the Department of Agriculture and the Treasury Department and will soon be available, and will help in such study clubs and elsewhere.

Offer your services as speakers to your local War Savings Directors; suggest other good speakers who have the necessary technical information. The best way to prevent the choice of ill informed speakers is to suggest good ones. Ask some of your graduates who have married and had practical experience in home making to enlist for occasional speaking. Offer a few lessons, if it be not more than two or three, for speakers who need more instruction as to facts.

Try writing. Ask the local newspaper to allow you to conduct a "question and answer thrift column" for a month, and give the best answers in your power to the multitudes of questions that are now being asked in regard to budget making, household accounts, how to buy, how to manage the home.

Gather up suggestive material from your students or from housekeepers, showing the actual way in which different individuals and families spend, and send this to the Savings Division. Send also every possible suggestion of plans of thrift work, of ways of reaching different kinds of people, of methods that you have found successful.

The National Savings Campaign is organized under the Savings Division, War Loan Organization, Treasury Department, Washington, and the active campaign is directed through twelve District Savings Directors located in the twelve Federal Reserve Bank Districts. Under each District Savings Director, an organization of state, county, and local savings directors is administered. The local savings director provides for the establishment of sales agencies for War Savings Stamps, and the organization of War Savings Societies in schools and other educational institutions, and in shops, stores, offices, and other places of employment. The members of the American Home Economics Association can contribute largely to the success of the national campaign by coöperating with their local savings directors in promoting War Savings Societies, and in helping to bring to every individual and family the ideals of thrift and of better living.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Nutrition and Clinical Dietetics. By HERBERT S. CARTER, PAUL E. HOWE, HOWARD H. MASON. Philadelphia and New York: Lea and Febiger, 1917, pp. 622. \$5.50.

This volume is a welcome addition to the number of general text-books on diet, designed for the use of the medical practitioner, the dietitian, and the teacher of dietetics. The authors have made a praiseworthy and measurably successful attempt to combine without confusion the working directions which may be deduced from laboratory experiment and from clinical experience.

The book is divided into four parts. Part I, Foods and Normal Nutrition, is subdivided into discussions of digestion, energy requirement, protein requirement, inorganic salts and water, normal feeding, and food economics. Most of the recent exact experimental material is mentioned, although not always in the organized and judicial fashion looked for in a text-book. Only six footnote references are given, and not all of these are selected with a view to furnishing the reader with the key to the most profitable further study. For example, under vitamins, only one reference is given, that to Williams' work on attempted vitamin synthesis.

This part is, nevertheless, remarkably inclusive in the number and adequacy of the topics it covers.

Part II, Foods, is divided into chapters classified as dealing with protein-rich, carbohydrate-rich, fat-rich foods, and foods valuable for their salts, water, and bulk. Each discussion of the common foods found under these headings includes usually information as to composition, cooking, and digestibility.

This familiar description and statistical material on foods is apparently considered indispensable to texts on dietetics, but has become so accessible from other sources that one wishes the space might have been used for the enlargement of the less easily digested and more pertinent material in Part I.

Part III, Feeding in Infancy and Childhood, is a somewhat less complete and less satisfactory treatment of a most important topic than the scope of such a text-book would prescribe.

The clinical character of the book is naturally more marked in this and in the following part than in those preceding, but is disappointingly apparent here. One cannot help feeling that even the most clinical minded and hurried practitioner might welcome here some mention of infantile scurvy, normal growth standards, stool analysis, to mention only the most obvious of the omissions.

Part IV, Feeding in Disease, forms the main portion of the book. The chapters are divided in the usual manner, according to disease grouping, and, also in the usual manner, every type of ailment is listed faithfully by name whether or not a specific dietetic recommendation can reasonably be made for it.

The statement made by the authors in the preface that "a book founded entirely on facts proved in the laboratory is as yet impossible . . . and that in dealing with all things human the personal equation is of immense importance . . . that it is on this account that accurate clinical observation will always be a prime factor

in the successful feeding of patients" is borne out by the amount of clinical detail introduced into Part IV.

A constant attempt is made, however, to introduce the results of experimental evidence wherever such evidence is available, and references to these original sources are at least occasionally given. As is promised in the preface, the latest evidence is always presented wherever it is not overshadowed by more convincing older work. It is apparent, however, that revision and addition must even now be made in more than one chapter.

It may be questioned whether the time may not have come when these encyclopedic treatises upon so complicated and constantly changing a subject as dietetics are no longer necessary. Certainly their constant revision involves considerable expense and labor. The alternative practice so well exemplified in the series of Biochemical Monographs, of coordinated separate publications on the important subdivisions of the subject might well be given a trial.

Meanwhile "Nutrition and Clinical Dietetics" will be found among the favorite references of the practical prescribers of diet.

AGNES FAY MORGAN,
The University of California.

The Business of the Household. By C. W. TABER. Lippincott's Home Manuals. Edited by B. R. Andrews. Philadelphia: J. B. Lippincott Company, 1918, pp. 438. \$2.00. By mail of the Journal, \$2.15.

Too often books and articles on business practices in the household treat only of the financial aspects of budget planning, household accounting, savings, and credit, and pay but little attention to the need for developing better judgment in the use of money so that better living standards will be maintained.

Too often books and articles on better household practices pay but little attention to the cost of such practices in relation to income and the amount of other necessary expenditures, thus losing much of their

practical value in improving home standards as a whole rather than as a part.

Neither criticism can be made of "The Business of the Household," and it should prove of great value for this reason as well as for the large amount of information which it presents in clear, interesting form.

The first part of the book deals with the "Fundamental Principles of Household Finance," and includes excellent material on budgets and accounts, although not many people would probably be willing to use quite as complicated forms as those suggested.

"Factors in the Family Budget" are next considered, and there are unusually good discussions of the financial and homemaking aspects of the various types of expenditure included within the family budget plan.

The last part of the book contains much reliable information, not easily available hitherto for teaching or personal use, with reference to the legal status of the family, real estate titles and transactions, inheritances and wills, and laws which affect the family.

At the end of each chapter are suggestions for questions, problems, and demonstrations, or themes for debates, which should prove serviceable in arousing interest in the class room and in the home in the practical applications of the general principles being studied. There is also a good bibliography in connection with each topic discussed.

The book should prove serviceable to the many men and women who are endeavoring to manage their homes on sound business and homemaking principles, and also to the home economics teacher and extension worker. It should also prove serviceable to the teacher of arithmetic, economics, or civics, who is desirous of including in the course discussions of problems touching on matters of household finance or improvement of living standards.

Criticism might be made that the author assumes that all families have a larger and more regular income than is common in many industrial and rural centers, and a

considerable amount of leisure from other work for attention to the management of the home. Comparatively little space is devoted to any discussion of the various community efforts to improve home living conditions and the need for coöperation in such efforts as well as for work to improve the individual home. In spite of these limitations in breadth of vision, the book is a real contribution to the small number of books dealing with home problems from a financial or legal viewpoint, and to the larger number of books dealing with the various problems of home management from the practical, housekeeping viewpoint.

EMMA A. WINSLOW.

Camouflage Cookery. By HELEN WATKEYS MOORE. New York: Duffield and Company, 1918, pp. 106. \$1.00. By mail of the Journal, \$1.05.

A book of "mock" dishes. An interesting compilation of recipes from mock chicken and mock horse's neck to mock bar-le-duc currants and maraschino cherries; most attractively gotten up, with one recipe to a page, and with each recipe a delightful quotation. The collection of quotations is itself almost worth the price of the book.

Food and Victory. By CARLOTTA C. GREER. New York: Allyn and Bacon, 1918, pp. 62. \$.40. By mail of the Journal, \$.45.

"Food and Victory" was prepared as a War Supplement to the author's "Textbook of Cooking," but much of it is valuable as a permanent contribution to economy in the use of food. The power of adaptation, and skill in the preparation of unfamiliar foods are qualities that have permanent value.

PAMPHLETS RECEIVED

Issued by the United States Department of Labor, Children's Bureau:
 Child Care Series: *The Care of the Mother, Feeding the Child, Milk, Breast Feeding, Bottle Feeding, The Preparation of Artificial Food, Good Books and Pamphlets on Child Care. Children Before the Courts in Connecticut.* Wm. B. Bailey. Dependent, Defective, and Delinquent Classes Series No. 6, Bureau Publication No. 43.
Sixth Annual Report of the Chief, Children's Bureau, to the Secretary of Labor.
Studies of Use of Milk by Families Having Little Children. III. New Orleans.

Issued by the United States Public Health Service:
Disabling Sickness Among the Population of Seven Cotton-Mill Villages of South Carolina in Relation to Family Income. Reprint No. 492 from the Public Health Reports.
Public Health Administration in New Mexico. Reprint No. 490 from the Public Health Reports.
Sanitation of Rural Workmen's Areas. Reprint No. 487 from the Public Health Reports.
State Laws and Regulations Pertaining to Public Health, 1916. Reprint No. 406 from the Public Health Reports.

Issued by the Department of the Interior, Bureau of Education:
Effect of War Conditions on Clothing and Textile Courses. Home Economics Circular No. 7.
Recent State Legislation for Physical Education. Bulletin, 1918, No. 40.
Rural-Teacher Preparation in State Normal Schools. Bulletin, 1918, No. 27.
Teaching American Ideals through Literature. Bulletin, 1918, No. 32.
Vocational Guidance in Secondary Education. Bulletin, 1918, No. 19.

Issued by the Federal Board for Vocational Education:

Agricultural Education. Bulletin No. 26, Agricultural Series No. 4.

Second Annual Report, 1918.

Buildings and Equipment for Schools and Classes in Trade and Industrial Subjects. Bulletin No. 20, Trade and Industrial Series No. 4.

Issued by the Massachusetts State Department of Health:

Care of the Child in Hot Weather.

Food Rules for School Children.

Food for the Child. Reprinted from the *Commonwealth*, Vol. 5, No. 8.

Food for Children from Two to Six Years Old. Reprinted from the *Public Health Bulletin*, Vol. 5, No. 2.

Food: What it is and What it Does. Reprinted from the *Public Health Bulletin*, Vol. 4, No. 12.

Food and the Calorie. Reprinted from the *Public Health Bulletin*, Vol. 5, No. 1.

Energy Producing Foods. Reprinted from the *Public Health Bulletin*, Vol. 5, No. 11.

Fats and Their Value in the Diet. Reprinted from the *Public Health Bulletin*, Vol. 5, No. 5.

Tissue-Forming Foods. Reprinted from the *Public Health Bulletin*, Vol. 5, No. 3.

Certain Dietary Essentials. Reprinted from the *Public Health Bulletin*, Vol. 5, No. 4.

Influenza Bulletin.

The Venereal Diseases.

Issued by the New York State Department of Health:

Epidemic Influenza Number. Mo. Bulletin, December, 1918.

Oral Hygiene Number. Mo. Bulletin, November, 1918.

Issued by the Ohio State University:

Kitchen Tests of Relative Cost of Natural Gas, Soft Coal, Coal Oil, Gasoline, and Electricity for Cooking. Department of Home Economics.

Utilization of Food. Recipes. Extension Bulletin Vol. XIV, No. 2.

Issued by the New Mexico College of Agriculture and Mechanic Arts:

Extension Circulars: A Whole Dinner in One Dish, No. 43; Meat Saving, No. 39; Pinto Bean No. 38; The Potato, No. 42; Soups, No. 49; Sugar Saving, No. 41.

Issued by the publishers listed:

The Common Cold. Leaflet No. 2. American Association for Study and Prevention of Infant Mortality, Baltimore, Md.

Fancy Meats in Newest Dishes. Canada Food Board, Ottawa, Ont.

Food Conditions in 1919. Bul. No. 22. Canada Food Board, Ottawa, Ont.

The Gary Public Schools. Household Arts. Eva W. White. General Educational Board, 60 Broadway, New York.

Medical Mail-Order Frauds. American Medical Association, 535 North Dearborn St., Chicago, Ill.

Testing of Textile Materials. Department of Commerce, Bureau of Standards, Circular No. 41 (3d Edition).

Training of Women for National Community Service. University of Chicago Press, Chicago, Ill.

BIBLIOGRAPHY OF HOME ECONOMICS

PERIODICAL LITERATURE

FOOD AND NUTRITION

A Bacterial Examination of Green Vegetables. Fred William Kirk, *Amer. Jour. Pub. Health*, 8 (1918), No. 7.

In this investigation attention was principally directed toward estimating the presence of coli-typhoid group, streptococci, and anaerobic organisms on green vegetables. The number of bacteria was also determined. An attempt was made to find whether or not the general sanitary conditions of the store at which the purchase was made had any influence on the bacterial contents. The study was made with vegetables from Chicago stores.

The conclusions are that there is a great variation in the bacterial counts and that no direct sanitary relations in the store sampled were apparent but it must be noted that the free lunch counters gave a very high colony count.

The observations do not seem to indicate that the general sanitary conditions of the store influenced the bacterial count.

Report of Committee on Production and Conservation of Food Supplies. *Amer. Jour. Pub. Health*, 8 (1918), No. 10, p. 780.

Cost to Consumer of a Pound Loaf of Bread. *Amer. Jour. Pub. Health*, 8 (1918), No. 10, p. 785.

A Comparative Study of Milk Plates by Four New York Laboratories. *Amer. Jour. Pub. Health*, 8 (1918), No. 12, p. 913. Editorial Note, p. 927.

"Reconstructed milk" is one of the food products to which war has given great stimulus. It is not in any way intended to furnish the supply in any country where cows are conveniently near.

Munition cities that were built in a day and without reference to the food supply of the country about them were the ones to be benefited. At Nitro, W. Va., there was established a city with a daily demand for milk of about 3,000 quarts. There was prospective danger to the children, to say nothing of the inconvenience to their elders. The U. S. Public Health Service saw the opportunity for a very practical trying out, and its report of the results is exceedingly satisfactory. Reconstructed milk is dried skim milk which for use is enriched by the addition of butter fats and in the process of reconstruction the milk is pasteurized.

Carbohydrate Content of Extracts of Muscle and Liver of Dead Animals. S. Twano, *Jap. Med. Literature*, 3, 36 (1918) *Chemical Abstracts*, 12, p. 2006.

Amounts of H₂O and Salts in the Blood of Newborn Infants. K. Sakai, *Jap. Med. Literature*, 2, No. 4, 1 (1917). *Chemical Abstracts*, 12, p. 2005.

Free Lactic Acid in Sour Milk. *Jour. Biol. Chem.*, 35 (1918), pp. 147-178. *Chemical Abstract*, 12, p. 1972.

The Casein of Human Milk. *Jour. Biol. Chem.*, 35 (1918), pp. 115-117. *Chemical Abstract*, 12, p. 1971.

Study of the Non-protein Nitrogen of Wheat Flour. M. J. Blish, *Jour. Biol. Chem.* 33 (1918), pp. 351-359. *Chemical Abstract*, 12, p. 1979.

Globulin of Buckwheat. Carl O. Johns and Lewis H. Chernoff, *Jour. Biol. Chem.*, 34 (1918), pp. 439-445. *Chemical Abstract*, 12, p. 1994.

TEXTILES AND CLOTHING

Year's Review of Cotton Manufacturing. Charles Mills, *Textile World Jour.*, Jan., 1919.
Artificial Silk and Cotton Mixed Fabrics. Laneshaw, *Textile World Jour.*, Dec., 1918.

- Dress Cottons. *Dry Goods Economist*, Dec., 1918.
 Bills and Budgets. Forest Crissey, *Sat. Evening Post*, Dec. 14, 1918.
 Lettering Essentials for the Commercial Design Students. *Indus. Arts*, Feb., 1919.
 Textile War Work of the Bureau of Standards. E. Dean Walen, *Textile World Jour.*, (Annual), Jan. 11, 1919.
 Textile Thrift in Salvage Service. *Textile World Jour.*, Jan. 11, 1919.
 Central America: Textiles and other designs taken from those of the Mayans of Central America. Ada Beckwith, *School Arts*, Nov. 1918.
 Costume Designing. Endora Sellner, *School Arts*, Jan., 1919.

FURNITURE AND FURNISHINGS

- The Jacobean Period in Furniture and Decoration. *Art World*, Dec., 1918.
 A History of Italian Furniture from the XIV to Early XIX Century. *Int. Studio*, Dec., 1918.
 Historical Style and The Designer—Greek Influence. Edward J. Sake, *Indus. Arts*, Dec., 1918.
 Historical Style and the Designer—Roman Influence. Edward J. Sake, *Indus. Arts*, Feb., 1918.
 A New Decorative Incident—Modern Polychrome Furniture. *Art World and Arts & Decoration*, Nov., 1918.
 The Furniture of the Allies. Alice Van Leer Carrick, *House Beautiful*, Jan., 1919.
 Floors, Walls, Ceilings of a Modern Kitchen. Eva Nagel Wolf, *House and Garden*, Jan., 1919.
 The Bedroom of Individuality. Nancy Ashton, *House and Garden*, Jan., 1919.
 Cottage Chairs for Country Homes. *House and Garden*, Jan., 1919.
 Color Tones in Painted Furniture. Mary Northend, *House and Garden*, Jan., 1919.
 How to Handle Color in Decoration. *House and Garden*, Jan., 1919.
 Old French Wall Paper Decorations. *House and Garden*, Dec., 1918.
 Wall Paper—Its History and Development. *Decorative Furnisher*, Dec., 1918.

MISCELLANEOUS

- Projects for a School Bazaar. Permodello Modelling. Bonnie E. Snow and Hugo B. Froelich. *Indus. Arts*, Feb., 1919.
 A New Kind of Toyland. *Indus. Arts*, Feb., 1919.
 With Paint—Brush in Hand. Grace Dewaele Rockwell, *House Beautiful*, Dec., 1918.
 War Time Activities in the Schools. Bonnie E. Snow and Hugo B. Froelich, *Indus. Arts*, Dec., 1918.
 Keeping Warm in a Colonial Winter. Geo. Wilson Jennings, *House and Garden*, Dec., 1918.
 About Toys. Pedro J. Lemos, *Indus. Arts*, Dec., 1918.
 Contagious Diseases and the Child Welfare Movement. Edwin H. Place, *Mo. Bul. Mass. Dept. of Health*, Nov., 1918.
 Fashions as Affecting Public Health. *Amer. Jour. Pub. Health*, Nov., 1918.
 A Critical Study of the Bacterial Count in Water and Sewage. *Amer. Jour. Pub. Health*, Nov., 1918.

NEWS FROM THE FIELD

Fellowships in Social-Economic Research.—Three paid fellowships in social-economic research are offered each year by the Women's Educational and Industrial Union to women who wish thorough preparation for such work. The fellowships carry a stipend of \$500. Clerical assistance, equipment, and traveling expenses necessary for the investigation are furnished by the Department of Research.

A degree from a college of good standing, training in economics or sociology, and satisfactory references in regard to health, character, and special fitness for social-economic research are required of all candidates for the fellowships. For the past five years the successful applicants have been women with some graduate training or experience. The research fellows are expected to devote their entire time for ten months to the training given by the Department of Research.

Training is given in the making and criticism of schedules, in field work in the construction and interpretation of statistical tables, and in the literary presentation of the results of the investigation. All fellows are required to take the course in statistics given by the Director of the Department of Research.

In addition to formal training in statistics and methods of research, two coöperative investigations will be made by the staff of the Research Department. The first of these is limited in scope and is based on data already collected. The second, which will be the chief original investigation of the year, will require field work for the filling of schedules, and will afford each fellow experience in all stages of the work required for modern coöperative investigations of social or economic problems.

Students who have received satisfactory undergraduate training in sociology and economics may offer the year's work in the Research Department in fulfillment of requirements for the degree of Master of Science in Research at Simmons College. The thesis or research work is accepted also in certain seminar courses at Radcliffe College, Tufts College, and Massachusetts Institute of Technology. By special arrangement with the Committee on Graduate Instruction of Wellesley College, the work may be counted as a part of the requirements for a master's degree. Several western universities have accepted the completed studies as theses for advanced degrees, and have given graduate credit for the training in research. Professors from affiliated colleges serve on the committee which awards the fellowships.

Application must be filed before May 1.

For further information and application blanks, address Department of Research, Women's Educational and Industrial Union, 264 Boylston Street, Boston, Massachusetts.

Conference of State Leaders, Home Demonstration Agents in Northern and Western States. These meetings were held in the offices of the Women's Section, North and West, States Relations Service, United States Department of Agriculture, January 2 and 9, inclusive. Miss Florence E. Ward was chairman of the conference.

The program opened with an address from Dr. True. There were short reports from the states; mock community meetings for the purpose of presenting the strong points in organization; round tables for discussion of special interests; committee meetings to consider the program of work, outstanding projects, relation of research to home dem-

onstration work, specialists, graphics, publicity, farm and home bureau organization, coöperating government agencies, coöperating projects within the colleges and the Department, office organization reports and records, insignia, community projects, and general resolutions. There were three social gatherings: a joint dinner of all extension workers, North and South participating; a tea given by the Washington Staff at Miss Ward's apartment; a reception by Mrs. David Houston, wife of Secretary Houston. Visits were made to the White House and Senate, and the conference closed with individual discussions with each member of the scientific staff.

A brief survey of reports from the field indicate that home demonstration work is developing into a strong organization. The rural work is progressing toward a permanent place in the Farm Bureau scheme. Urban work is strengthening its organization which is based on the same general principles as the Farm Bureau. The principle on which these newer plans of work are based is that of self-expression in the community. Each farm or home bureau is assisted by the agent to the point of articulating its needs, of putting on a program of work to meet these needs, and depending upon the leadership of the Home Demonstration Agent to carry out this program.

Notes. A department of Household Economics was organized at the University of Alberta, Edmonton, Canada, in 1918. The work is in charge of Miss Mabel Patrick, an Honours Graduate in Household Economics of the University of Toronto.

Miss Frances Stern, the author of "Food for the Worker," who is in Paris with the Red Cross, writes: "Here in the land for

which we have conserved, there is not a great deal of popular education along the food line, and a group of men are trying to introduce home economics into the schools and to present it in some popular form to the people. Dr. Marcel Labbe, a prominent physician here, is very much interested, and is anxious to get material telling how the United States has done things.

"Miss Harris of the Framingham Normal School is working with me, and we are hoping to do a little educational work here."

Miss Mary Gearing, on leave of absence from the University of Texas, is with the Young Women's Christian Association as Associate Executive, Health Division, Bureau of Social Education. Her special task is to coördinate home economics with the general health program of the National Y. W. C. A.

At the Battle Creek School of Home Economics and Dietetics, a new sorority of dietitians—the Alpha Theta Pi—has been founded. Its members are already scattered through different parts of the United States and several are in France. Miss Lenna Cooper, director of the school, is an honorary member. It is hoped that this organization may coöperate with the American Dietetic Association in advancing dietetic work and furthering investigation in this line.

Miss Alice Ravenhill has resigned from her position at the Utah Agricultural College, Logan, Utah, after a prolonged attack of influenza and pneumonia, and has returned to her home in Victoria to recuperate. She plans after her complete recovery to give her time chiefly to lecturing, in which she has won a unique place among home economics workers.

The twelfth annual meeting of the American Home Economics Association will be held at Blue Ridge, N. C., June 23-28.

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CHANGES IN FOOD VALUE OF VEGETABLES DUE TO COOKING*

EFFECT OF VARYING HOUSEHOLD MANIPULATIONS

MINNA C. DENTON

I. INTRODUCTION

Recent progress in nutrition is emphasizing heavily the inadequacies of a diet with a preponderance of cereal products and vegetable fats—our cheapest sources of protein and calories—at the same time that food scarcity puts some of their most effective supplements, such as eggs, milk, meat, and animal fats, very nearly out of the reach of all except the well-to-do classes. It seems that many of the fresh vegetables and fruits have some value, in several respects, as supplements to inadequate diets of certain types. But at most seasons of the year these, too, are considered to be out of reach of the limited purse, with a few exceptions, prominent among which are vegetables which may be canned in time of plenty, and the “winter vegetables.” If these local products are to be more largely used in the diet, both as supplements to the cereals and meats and as substitutes for them, an extended knowledge of their value with regard to various dietary factors is desirable. This study is concerned with the factors which are usually the first ones to be determined—their fuel values and ash content—these being determined from the vegetables as served to us at the table, after household manipulation, possibly also after commercial manipulation, as in the case of canned foods.

With the exception of potatoes, the winter vegetables are mostly strong-juiced or highly flavored, and their flavors do not commend themselves to all persons, particularly often not to those of highly dis-

* This paper was presented as part fulfillment of the requirements for the degree of Ph.D. in Household Administration, University of Chicago, August, 1918.

criminating or of irritable nervous organizations, unless the flavor can be somewhat modified. Partly for this reason and partly for purposes of convenience, the methods very generally employed in cooking and in canning them have involved the use of a greater or less excess of water, which has considerable extractive power at the temperatures employed. Food conservationists are urging that these vegetable foods should be baked, or steamed, or boiled in their jackets, or that the vegetable stock should be utilized; yet practical objections, such as those in the following list, continue to be urged upon some occasions.

1. It is apparent that neither cabbage heads nor large root stalks can be boiled whole,—their size forbidding this possibility.

2. Chlorophyl-bearing tissue usually turns more or less brown when steamed, though boiling water (even distilled, but especially when “hard” or when salted or made alkaline with soda) satisfactorily “sets” the green color of cabbage, cauliflower, Brussels sprouts, peas, string beans, and the yellow color of blanched celery. If the cooking be not too long continued, this green color is satisfactorily retained in boiled vegetables.

3. The steamed product is dryer and less water-logged than the boiled, and of different texture; it has of course no flavor of added salt, and yet (steamed at 90° to 100°C.) it may retain its characteristic odor and taste more strongly than does the boiled vegetable. The consequence is that the uninitiated frequently pronounce steamed cabbage both rank and insipid, also “not done.”

4. The washing of spinach or greens which have been transported for long distances “packed in mud” (cracked ice) is a tedious process and often more or less of a failure, even when a good deal of pains has been taken. Under these circumstances it is a great help to boil in excess of water and skim out the greens when done, because thus the remaining sand and grit fall to the bottom of the kettle, instead of sticking to the leaves, as is the case with the steamed product.

5. The strong taste of condensed spinach juice, such as is produced by cooking the leaves in a very small amount of water, proves objectionable to many persons, including children not old enough to express themselves verbally upon the subject.

6. Baking is desirable, yet often impracticable for various reasons, among which are the expense of fuel, and the overheating of the kitchen from the oven.

7. Home and commercial canning methods alike usually call for a preliminary “blanching” process which is advisable for various reasons; yet

this period of boiling in excess of water, which apparently is never utilized to advantage, seems inconsistent with our customary efforts to "save the juice." (This objection does not apply to the steam blanch or to blanching in skins.)

8. The vegetable canned in excess of water at high temperature, as are some of the commercially prepared products, may well lose a large part of its nutrient values of various sorts to the "juice" drained off when the can is opened; yet this juice, especially when excessive in amount, is often not palatable, and is feared by some because of its possible content in tin, lead, or iron salts derived from a metal container.

9. The cook often finds it a convenience to pare vegetables and cut them ready for serving, early in her preparation of the meal. She does not wish to add peeling of potatoes or carrots to the list of things which must be done in the busy period just before the meal is served when the biscuits are to be baked and the coffee to be put over, the gravy to be made, and the salad to be dressed. She therefore objects to cooking vegetables in their skins.

10. The use of a large rather than a small amount of water with vegetables shortens the period of their cooking to such an extent that the average home cook often prefers to use an excess of water rather than barely water to cover.

Thus it would appear that a single generalization does not suffice to dispose of all cases, but that the cooking of each vegetable is a question to be decided on its own merits, if the conservation of nutritive value is to be combined with maximum palatability and practical convenience.

Other questions which occur to the dietitian who compares the cooked vegetable with the raw, are such as these: After careful consideration of the details of every-day practice to be observed all about us, how are we to estimate the dietetic value of vegetables cooked in diverse ways? Shall we in computing or planning dietaries, assign to the cooked vegetable 90 per cent or 75 per cent or 50 per cent of the caloric value of the edible portion of raw vegetables? What is the proportionate loss sustained by vegetables which have been "blanched" in excess of unsalted boiling water, as practiced in some canning processes; by vegetables covered with water and cooked in quart jars in bath of boiling water for two and three hours, as recommended for home canning? Does the vegetable with high content of soluble carbohydrate lose proportionately more than that with lower content? Does the root stalk cut into large pieces suffer considerable loss? Do uncut vegetables which present a

large amount of exposed cuticle (leguminous seeds, leaf greens, fleshy buds and flowerets as loose-leaved cabbage and cauliflower) suffer considerable loss from the extractive effect of boiling water? Are the losses from steaming at 90° to 100°C. (efficient home steamer) negligible; are those from direct exposure to steam at 100° to 120°C. (institutional cooker) also negligible? Does the addition of salt to the cooking water, in small amounts (1.5 per cent solution at beginning of process) increase or diminish the cooking loss? Does the loss diminish if sectioning be done longitudinally (parallel with the fibro-vascular bundles) rather than crosswise (across them, exposing their cut ends at both surfaces of each slice to the solvent action of water)?

II. REVIEW OF LITERATURE ON LOSSES IN COOKING VEGETABLES

Most of the work done on losses of cooked vegetables is concerned chiefly with mineral constituents. In many cases very few details as to method of cooking are given, which makes it difficult to compare results of different investigators.

Wagner and Schaefer¹ reported finding that potatoes steamed in their skins lost 1.17 per cent of their crude ash, 0.69 per cent of their potassium, 0.03 per cent of their phosphorus. Steamed after paring, these losses were 7.28 per cent, 6.93 per cent, and 4.57 per cent, respectively. Boiled in their skins, they lost 3.64 per cent of their crude ash, 3.32 per cent of their potassium, 1.12 per cent of their phosphorus; boiled after peeling, 28.86 per cent, 38.33 per cent, and 22.87 per cent, respectively. 1 kgm. of spinach lost 8.578 grams of dry matter (1.684 gram N, 3.375 grams of ash); 1 kgm. of carrot tops, chopped, lost 15.252 grams dry matter (3.312 grams N, 6.331 grams ash). Average losses in boiling were 9 to 18 per cent of the total soluble matter found in the unboiled vegetable food.

Snyder, Frisby, and Bryant² found that potatoes when pared, soaked 3 to 5 hours, and put over to cook in cold distilled water, lost 46 to 58 per cent of their total nitrogen (about one-half of which is in the form of protein), 25 per cent of their protein, and 38 per cent of their mineral salts. When pared, put into either hot or cold distilled water, and cooked at once, the losses were half these amounts or less; when cooked in skins, the nitrogen loss was 1 per cent, the protein loss 0.5 per cent, the

¹ Sachs, *Landw. Ztschr.*, vol. 33, p. 369, 1885. (Abstr. in *Jahresb. f. Agrikultur. Chem.*, N. F. 8, vol. 28, p. 443, 1885.)

² Bull. 43, Office of Exp. Sta., U. S. Dept. Agr., 1897.

mineral loss 3.3 per cent. Frisby and Bryant, in another experiment, found that pared potatoes, put into cold distilled water and cooked, lost 9.2 per cent of their nitrogen, 2.7 per cent of their carbohydrate, and 17.2 per cent of their ash; when cooked in their skins, they lost 1.6 per cent of their ash. Varying the experiments by using "alkaline water" or "lime water," instead of distilled, produced no important variations in losses—except that it seemed that the lime water (and the cold alkaline water) took out a little more protein than did the distilled water controls. Carrots, scraped and cut into pieces, lost from 20 to 40 per cent of their nitrogen, and from 29 to 47 per cent of their ash, according to size of pieces. Half a solid cabbage, put into cold water and cooked, lost from 33 to 46 per cent of its nitrogen, 33 to 42 per cent of its fat and carbohydrate, 48 to 54 per cent of its ash; put into hot water and cooked, the losses were usually (but not always) a little less. On the whole, the alkaline and lime waters had a slightly greater extractive action than did the distilled water.

Kraus³ found that cabbage turnip when cooked had lost 20 per cent of its carbohydrate; cauliflower, 33½ per cent; spinach, 71 per cent; winter cabbage, 53 per cent.

Zschokke⁴ worked on losses in "blanching" (boiling in hot water) of carrots (cut in pieces), peas, string beans cooked whole and also cut into pieces. In each case, one-half of the vegetable was steamed and the other half boiled for 25 to 30 minutes. The losses in total dry matter were about five times as much by boiling as by steaming; losses in salts, usually only from three to four times as great in boiling as in steaming. He gives no data for raw foods, but, if we were to judge from American analyses for these foods, we should conclude that his losses in protein and mineral salts were markedly lower than those reported by most workers, while his losses in "nitrogen-free extract" run only a little lower than some losses in caloric value reported in the present paper. (He found a loss of 3.43 grams of nitrogen-free extract per 100 grams raw material in boiled carrots, 2.43 grams in boiled peas, 0.624 grams in beans boiled whole, 0.768 gram in beans boiled in pieces.)

Haensel⁵ reports a loss of about 0.08 gram of iron oxide from 100 grams of fresh vegetable, in boiling spinach; and 70 per cent of its iron, in boiling lettuce in water—if I have correctly interpreted his report.

³ *Ztschrf. f. Diät. u. physik. Ther.*, vol. 1, p. 69, 1898. Cited in Hutchison's Food and Dietetics.

⁴ *Landw. Jahrb. d. Schweiz.*, vol. 19, p. 615, 1905.

⁵ *Biochem. Ztschr.*, vol. 16, p. 9.

Williams⁶ gives a number of analyses of cooked foods, calculated to moist condition; but in her earlier articles, no corresponding analyses of raw materials were made, so that it is impossible to judge of the proportionate losses. A later article⁷ reports a loss of 10.59 per cent of its protein and 5.36 per cent of its ash, by celeriac, pared, sliced thin, and cooked 30 minutes in boiling water. Chicory, borecole, and endive (procedure not stated) lost from 30 to 43 per cent of their protein and from 12 to 19 per cent of their ash. Dried legumes (butter beans, green flageolets, soy beans), soaked 12 hours and then cooked (whether in the same water, and how much, is not stated), lost into their cooking water 26 to 28 per cent of their protein, and 5.5 to 17.05 per cent of their ash. Chestnuts (evidently fresh) lost 54 per cent of their protein and 7 per cent of their ash. A still later paper⁸ evidently reports further work, especially with regard to protein losses. Cooked in boiling water by the usual method, spinach, with 10 per cent of total solids, loses one-fourth of these; celeriac loses half of its total solids (7 per cent of its ash, 54 per cent of its protein); turnips, almost half; lettuce, one-fourth; asparagus, one-sixteenth; curly greens (borecole) 40 per cent (16 per cent of its ash, 54 per cent of its protein); chicory, 20 per cent (12 per cent of its ash, 43 per cent of its protein); butter beans, 10 per cent (19 per cent of its ash, 30 per cent of its protein); endive, 25 per cent (19 per cent of its ash, 30 per cent of its protein).

Maurel and Carcassagne⁹ found that blanching for 30 minutes (or 15 minutes? the two reports conflict) in distilled water, removed 40 per cent of the total salts from cauliflower, 44 per cent from Brussels sprouts, 55 per cent from cabbage sprouts, 26 per cent from celery root (celeripied), 37 per cent from celery leaves, 35 per cent from asparagus, 34 per cent from green beans, 19 per cent from white beans, 33 per cent from lentils, 61 per cent from potatoes. Amounts of potassium lost were in all these cases, except two, relatively high, ranging from 25 to 73 per cent of total potassium. In general, 40 to 50 per cent of total salts (50 to 75 per cent of total potassium) was lost in this blanching process. In the case of legumes, 30 minutes' blanching removed a much larger amount of potassium (73 per cent in white beans, 38 per cent in lentils) than did the remainder of the three hours' cooking (16 and 22 per cent,

⁶ *Jour. Amer. Chem. Soc.*, vol. 26, p. 244, 1904.

⁷ *Jour. Indust. Eng. Chem.*, vol. 5, p. 653, 1913.

⁸ *Chem. News*, vol. 113, p. 143, 1916.

⁹ *Compt. rend. Soc. Biol.*, vol. 67, p. 91, 211, 1909.

respectively). These authors also quote Laborde¹⁰ as finding a loss of 75 per cent total salts (60 per cent of potassium) in the blanching of cabbage; and Labille¹¹ as reporting losses of 29, 70, and 54 per cent of total potassium for 5 minutes' blanching of green beans, sorrel, and spinach, respectively; also, loss of 36 per cent of potassium in 10 minutes' blanching of potatoes.

Poppe¹² cooked (or soaked) fresh green peas in two and one-half times their own weight of water or liquid, for 1 hour at 100°C., for two hours at 50°C., for 24 hours at 20°C. They used seven liquids—distilled water, saturated NaCl solution (56 per cent), half-saturated, and quarter-saturated (10 per cent NaCl), saturated sugar solution (about 105 per cent), half-saturated, and quarter-saturated (18.4 per cent). They found that the peas boiled in distilled water lost 10 per cent of their nitrogen (it seems the raw peas contained 19 per cent of protein), 13.6 per cent of their carbohydrate (6.92 per cent carbohydrate in raw peas), 3.9 per cent of their phosphorus (0.66 per cent in raw peas), none of their chlorine. The salt solutions removed less of the nitrogen than did distilled water, and very little phosphorus or carbohydrate; the stronger salt solutions removed less nitrogen, in general, than did the weaker, but there was little difference in their extractive effect on carbohydrate. All losses were, as a rule, greater at the higher temperatures, because these kill the protoplasm and convert it from a semi-permeable membrane to a permeable one, whereas at 20°C. the living protoplasm, though it imbibes water, is able to regulate its loss of solutes and the entrance of solutes from its environment, to a considerable degree. The peas took up about 1 per cent of their own weight in salt from the boiling quarter-saturated salt solution, and about 1.5 per cent of their own weight of sugar from the boiling quarter-saturated sugar solution. It is not stated whether the solutions were kept at their original strength by renewal of water as they boiled, or whether they became more concentrated as cooking proceeded. Unfortunately these most careful and scientifically made observations can apply only somewhat remotely to the problem of cooking losses, since solutions as strong as these could not be used in preparing vegetables.

Berry¹³ found that boiled spinach lost 50 per cent of its salts; boiled

¹⁰ *Soc. d. Hist. nat. Toul.*, March 28, 1900, p. 67.

¹¹ *Traité de l'Alimentation*, vol. 3, p. 522, 44, 35.

¹² *Bul. Soc. chim. Belg.*, vol. 25, p. 136, 1911.

¹³ *Jour. Home Econ.*, vol. 4, p. 405, 1912.

cabbage 40 per cent; boiled carrots (cut in pieces) 11.5 per cent of their salts (23 per cent of phosphorus) and 26 per cent of soluble carbohydrate.

Berg¹⁴ suggests that in some cases the losses in alkali as a result of boiling vegetables are so great that the vegetable may actually lose its basic ash, and come to possess an acid ash.

Bodinus¹⁵ announces that the loss of solids in boiled potatoes is at least 2 per cent if pared. If sodium chloride be added to the water, the loss is 1.25 per cent of the starch and 10 per cent of the potato salts; if no salt is added, the potato loses 33 per cent of its salts.

Morgan¹⁶ reports a smaller loss of salts in peas canned by the commercial process than in those canned by the three-day sterilization home process. (Specifications and detailed results not given.) She found a loss of 18 per cent of the ash (25 per cent of phosphorus) due to blanching.

Blunt and Otis¹⁷ boiled 5 to 10 grams of spinach, string beans, navy beans, and peas, respectively, in 25 to 75 cc. distilled water in a covered beaker for 20 to 40 minutes (navy beans two hours); potatoes were also boiled (seven were scraped, cooked together, and mixed). These vegetables, both raw and cooked, and the cooking water were then analyzed for iron. The losses found were: spinach, between 43 and 50 per cent of its total iron; string beans, between 39 and 43 per cent; navy beans, between 32 and 39 per cent; peas, 36 per cent; potatoes, between 15 and 22 per cent.

Visawanath¹⁸ found that neutral salts (of calcium, magnesium, and sodium) retard, and alkaline salts (e.g., Na_2CO_3) accelerate the cooking of legumes (dhall) because they retard or accelerate respectively, the solution of protein and starch, but more especially of protein.

Courtney, Fales, and Bartlett¹⁹ cooked seven varieties of vegetables by "thorough boiling" for 30 to 150 minutes, and analyzed cooked vegetables and cooking water for calcium, magnesium, phosphorus, chlorine, potassium, sodium, sulphur, iron, and nitrogen. The percentage losses on most salts were greater than losses in calcium and nitrogen. New Zealand spinach was an especially heavy loser (72 per cent of total ash), yet it lost very little of its calcium, and the same thing was true of ordinary spinach. (Both these vegetables are especially good sources of

¹⁴ *Nahrung. u. Genussmittel, Aschbestandteile*, Dresden, 1913.

¹⁵ *Chem. Zentr.*, Bd. 2, p. 37, 1915.

¹⁶ *Jour. Home Econ.*, vol. 7, p. 72, 1915.

¹⁷ *Jour. Home Econ.*, vol. 9, p. 213, 1917.

¹⁸ *Mem. Dept. Agri., India, Chem. Ser. 4, No. 5, p. 149, 1916. Abstr. from Chem. Abstr., 1917.*

¹⁹ *Amer. Jour. Dis. Children*, vol. 14, p. 34, 1917.

calcium, if one were to judge from chemical analyses alone,—a questionable proceeding.) Carrots, onions, and asparagus lost but a trace of iron; spinach, 28 per cent of its iron; New Zealand spinach 51 per cent. Reducing the time of cooking made little difference in the losses (spinach cooked 10 minutes instead of 90, string beans cooked 60 minutes instead of 150 minutes lost almost as much as before). Steaming, however, reduced the losses materially (spinach only half as much loss as when boiled, asparagus one-third as much, carrots one-fourth as much). New Zealand spinach and onions still lose 20 to 30 per cent of their more soluble constituents, when steamed (for 30 minutes).

Weibull²⁰ concludes that while potatoes do not lose appreciably if boiled in their skins, they lose 0.5 per cent of their solids if pared before boiling. If sweetened by chilling, they lose 0.5 per cent when boiled in skins, 1.5 per cent when pared before boiling. Cooked in hard water, they retain their solanin; cooked in distilled water, they lose one-third of it.

Wardall,²¹ working to develop a method of making vegetables free of digestible carbohydrate for the use of the diabetic, placed the finely cut vegetables in cold water, brought this to the boil, boiled for several minutes, then poured the water off and repeated the process. She found that, while beets give a test for reducing sugar after two such extractions and are then exhausted of such carbohydrate, cabbage still gives the test after 8 extractions, carrots after 6, eggplant after 7, parsnips after 6, pineapple after 9. Extracted in water at 60°C., 1 hour was required to extract all reducing carbohydrate from beets; 1½ hours for carrot; 2 hours for eggplant; 1 hour for parsnips; 3½ hours for pineapple. Cabbage seemed to give up little of its reducing substance to a 60°C. extraction.

†Masters²² tried the effect of boiling dried beans in a large excess of water (five times their own weight) treated in various ways. She found that soaking the beans overnight reduced the time of cooking only from 2 hours and 5 minutes to 2 hours. (The experience of the author of this paper is very nearly in accord with hers, though there is a good deal of variability among the different kinds and different grades of maturity. If the beans be put directly into boiling instead of into

²⁰ *Kungl. Landbruks-akad. Handling ar Tidskrift*, vol. 56, p. 348, 1917. Abstr. in *Chem. Abstr.*, 1917.

²¹ *Jour. Amer. Med. Assn.*, December 1, 1917.

²² *Biochem. Jour.*, Oct., 1918.

† This thesis was prepared in March 1918. The following notes were added in March, 1919, in order to bring the bibliography up to date.

cold water to cook, the time is still further reduced in some instances.) The soaked beans lost a larger proportion of their solids than did the unsoaked (12.2 per cent instead of 10.5 per cent in tap water; 12.6 per cent instead of 11.1 per cent, in distilled water). Salting the water reduced the losses considerably: in 0.25 per cent NaCl, they lost 9.2 per cent of their solids; in 0.5 per cent NaCl, 8.7 per cent; in 1 per cent NaCl, 8.3 per cent. Even the salts of tap water had a slight effect in this respect (11.1 per cent loss when boiled without soaking, instead of 10.6 per cent loss in tap water), when soaking and cooking were not too much prolonged. Adding soda increased the losses; boiled (without soaking) in 0.1 per cent solution of sodium bicarbonate in tap water, they lost 11.3 per cent of their solids; in 0.25 per cent solution, 14.3 per cent; in 0.5 per cent solution, 22.3 per cent; in 1 per cent solution, 27.3 per cent. Disintegration was very rapid at the higher concentrations, and the flavor was such that the beans were uneatable; the most satisfactory results were those when 0.1 per cent sodium bicarbonate was used.

Cooking by steaming was also tried; 100 grams beans were covered with 250 grams boiling water, the basin was placed quickly in a steamer, and closed with a tightly fitting lid. When thus steamed without previous soaking, they lost 8.9 per cent of their solids; soaked overnight and thus cooked, they lost 10.4 per cent; cooked (without soaking) in 0.25 per cent NaCl, they lost 8.4 per cent; cooked (without soaking) in 0.1 per cent sodium bicarbonate and 0.25 per cent salt, they lost 7.8 per cent; cooked in 0.1 per cent soda and 0.25 per cent salt after previous soaking they lost 8.1 per cent of their original weight.

Denton and Kohman²² fed young white rats raw carrots, boiled carrots with the concentrated cooking water, boiled carrots without the cooking water, and canned carrots (processed two hours in boiling water bath). During the short period (five weeks) when carrots formed the sole diet (except for certain salts which were added), it was clear that those animals fed on raw carrots had the advantage over the others. Difficulties which the animals had in accommodating themselves to the unsuitable diet appeared to be greater, in proportion to the length of time the carrots had been cooked. However all animals rallied and began to improve in time, except those on the canned carrots, who were started later than the rest and had not sufficient time to show what they could do before a change in diet was

²² *Jour. Biol. Chem.*, vol. 36, p. 259, November, 1918.

made. When protein, fat, and starch were added to the diet in such proportions that the carrots furnished only one-half to two-thirds of the solids and of the calories of the diet, cooking of the carrots seemed to have no deleterious effects. True, however, it was observed that those animals which received carrots with the concentrated juice cooked down to some degree of caramelization did, after a time, fall considerably behind the rest in food consumption and also somewhat in rate of growth. The reason for this difference, which was perfectly apparent to all those who handled the animals and their food, cannot be stated, so far as I know, at the present moment.

Those animals fed boiled carrots without the juice, on the other hand, developed unusually large appetites, though their growth curves were not quite as good as those of animals similarly fed on raw carrots. Presumably this shows the effect of the loss of a considerable portion of the caloric value of the vegetable into the cooking water.

Daniels and McClurg²⁴ fed young white rats on a diet in which cabbage (raw, or boiled in water or in soda and water, or autoclaved) was the only source of water-soluble vitamine. The cooking water was included in the diet in all cases. The soda was added in the proportion of $1\frac{1}{2}$ teaspoonful per cup of raw beans (33 cc. of 5 per cent solution of sodium bicarbonate to 50 grams of soy beans); and $1\frac{1}{2}$ teaspoonful to 1 pound of cabbage (63 cc. of 5 per cent solution, to 250 grams cabbage); this proportion of soda is about what is very commonly used in cooking these vegetables. Their experiments continued only through one month in the case of cabbage feeding; but it is believed that the effects of a decided deficiency of water-soluble vitamine should be apparent within that time. Yet animals on all of these cooked diets thrive equally well with those fed raw cabbage, and all animals kept pace with or exceeded the normal rates of growth. Evidently, then, cooking of cabbage even at high temperatures or even in alkaline medium did not sufficiently impair the water-soluble vitamine so that growth was perceptibly interfered with, under the conditions above described.

It must, however, be noted with respect to the last two investigations reported, that it is possible the results might have been slightly different if the amount of vegetable fed had been reduced to the minimum, or that which would furnish barely sufficient vitamine to meet the needs of growth. In case cooking does have a slightly prejudicial effect on vitamins, it would be more likely to appear when the margin of safety is a narrow one than when it is a very wide one.

²⁴ *Jour. Biol. Chem.*, vol. 37, January, 1919.

As Miss Daniels remarks, this excessively wide margin of safety in respect to vitamins may perhaps account for the fact that her results are different from those of McCollum and co-workers (Jour. Biol. Chem., Vol. 33, p. 55) who found that the water soluble vitamin extracted from the wheat embryo was apparently destroyed by 60 minutes boiling in alkaline medium.

Stanley²⁸ gives tables showing losses due to blanching varying from 19 per cent in wax beans to 53 per cent in cabbage. Another table shows 52 per cent of mineral matter lost in boiled spinach, 9 per cent in steamed; 41 per cent in boiled cabbage, 11.5 per cent in steamed. Details of manipulation are not given.

(To be concluded.)

THE CANNING OF ASPARAGUS¹

ALICE E. SKINNER AND GRACE GLASGOW

The number of inquiries received by the college in regard to the difficulties experienced in home canning, and especially in the canning of asparagus, indicated a need for some method of canning this vegetable that would give a more palatable product than is obtained by the usual household methods. When asparagus is heated for the period of time usually thought necessary for successful canning, whether the cold pack or the intermittent method is used, it becomes so soft that it is difficult to handle without destroying its shape. Three hours, the length of time often recommended for processing, not only softens the vegetable, but also fails to give results uniform enough from the standpoint of preservation to warrant its recommendation. Periods of processing less than three hours are sometimes successful but the results are so variable that considerable loss from spoilage is not infrequent.

A number of tests were conducted. In part of them the asparagus was blanched for from three to five minutes in boiling water; in others

²⁸ Cooking of Vegetables. Cir. 1, Agr. Ext. Service, Univ. of Mo., 1915.]

¹ Experiments carried on in the Departments of Domestic Science and Bacteriology, Kansas State Agricultural College.

it was packed in jars without blanching. No advantages in favor of the blanching could be detected save that the shrinkage permitted a fuller pack. In fact in these experiments spoilage was more frequent in the blanched than in the unblanched product.

The tests were conducted with a view to working out some methods that would give uniform results in preservation without rendering the vegetable undesirably soft. As yet we have made no tests with the pressure cooker, the aim being to duplicate as nearly as possible the average home conditions. The water bath used was an ordinary covered kettle, deep enough to hold pint jars when placed on a rack. The asparagus stalks were cut in suitable lengths for the jars and fitted into to utilize the space to the best advantage. Only pint jars were used, as quart jars would necessitate making two layers, which would injure the lower layer of tips. After the pack had been made the jars were filled with boiling water containing salt in the proportion of one tablespoon to a quart of water. Some tests were made in which the quantity of salt used was increased to an amount sufficient to have some preservative action. In other tests dilute vinegar was used.

The first tests were made by simply processing in the water bath for three hours after the water around the jars had begun to boil. Of the three hour tests made, 50 per cent showed spoilage with the production of gas in some cases. Fifty per cent were apparently sound after nine months, although cultures from a number of jars showed the presence of organisms. The effect of this amount of processing is to soften the stalks to an undesirable extent. The flavor, however, does not seem to be impaired. An attempt to avoid the softening by using a shorter period of processing resulted in a much greater percentage of loss. Periods below two hours resulted in a total loss.

In the recommendations of the United States Department of Agriculture through the bulletins of the States Relations Service, the use of a heavy brine is advised in the canning of certain vegetables. This brine is made by using approximately two tablespoons of salt to a quart of water. The period of processing recommended for asparagus is two hours. Tests made according to these directions showed a lower per cent of spoilage than was found where salt was used only for seasoning. The product, however, did not invariably keep.

In another series of tests very dilute vinegar solutions were used, since the spore-forming aerobes, which are the types most often associated with spoilage of asparagus, are sensitive to small amounts of acid.

Where vinegar was used the time of processing was reduced to a period of from one and one-half to two hours with a decided reduction in the softness of the vegetable. The decrease in the percentage of spoilage, as compared with that in jars processed longer but not treated with acid, was very decided. In some of these tests two tablespoons of vinegar containing 4.4 per cent of acetic acid were added to each quart of the water used for filling the jars. In other tests only one tablespoon to a quart of water was used. The two tablespoons of vinegar was sufficient to produce a flavor characteristic and distinct though not to be recognized as acid. The amount of acid was not sufficient to cause any curdling of milk sauces with which the asparagus was subsequently combined. When the asparagus was served with an acid such as French dressing or Hollandaise sauce, the change in flavor due to the vinegar could not be detected.

The results of the tests made with vinegar indicate that two hours of processing is sufficient to keep the vegetable if a solution containing one tablespoon of vinegar to a quart of water is used for filling the jars. If two tablespoons of vinegar are used to a quart of water the time may be reduced to one and one half hours. The flavor where the smaller amount of acid is used is much less distinct and will therefore be more acceptable to some people, even though the increased time of processing required does make the vegetable slightly softer.

Bitting and Bitting in their bulletin, "The Bacteriological Examination of Canned Foods," from the Research Laboratory of the National Cannery Association, in speaking of the variation in spoilage in different sections of the country, and in the same section during different seasons, say: "This much is known, that peas are sterilized in New Jersey in a shorter period than in Wisconsin, and in the latter state in less time than in New York." In this connection it might be noted that we have found it much more difficult to sterilize culture media in the bacteriological laboratory here than in similar laboratories in Wisconsin, Illinois, and Pennsylvania. The inquiries received in regard to the canning of asparagus, as well as our own work, lead us to believe that the preservation of this vegetable, like the sterilization of culture media, is more difficult to accomplish here than in many sections of the country.

In the bacteriological examination of the canned asparagus all the jars were opened with special precautions against outside contamination. The work was done in a small culture room in which the floor and work

table were kept moistened to prevent any particles of dust from floating in the air. The jars were first washed thoroughly with water to remove any dust. The excess of water was removed with a dry cloth. The jars were then inverted in a dish containing 5 per cent carbolic acid solution and allowed to stand for ten minutes. After draining the jars were transferred to a dish containing 95 per cent alcohol and allowed to remain for ten minutes. The solution in each case came well up on the shoulder of the jar. The jars were lifted from the alcohol and drained for a few seconds, and the alcohol was burned off. The seal was broken by inserting the point of a sterile knife beneath the rubber. The lids were carefully removed and material for the bacteriological study taken with a sterile pipette. Both aerobic and anaerobic cultures were made. Two, as yet unknown, anaerobes have been isolated. The spore-forming aerobes, such as those of the *B. subtilis* group, *B. vulgatus*, and *B. megatherium*, were the types most often found associated with the spoilage of the asparagus.

Good flavor and odor in canned vegetables are not necessarily proof that the product is sterile. A number of jars, which after nine months were excellent in flavor and odor, showed the presence of organisms on culturing. These, as well as numerous other tests conducted in the bacteriological laboratory, indicate that the perfect seal had prevented the development of the organisms present. Those jars treated with vinegar showed the presence of organisms less frequently than did those not so treated. The combination of high temperature and dilute acid seems to be very effective in destroying bacterial life.

Further work on the canning of asparagus is under way in the hope of determining more definitely what methods and periods of processing are most successful. At present the following conclusions seem justified by the results of the work done up to date:

1. A period of processing necessary to sterilize the asparagus softens the vegetable to an undesirable extent.
2. Small quantities of acid added in the form of vinegar are very effective in reducing the time of processing necessary for the preservation of the vegetable.
3. The flavor imparted by the vinegar may be detected but is not objectionable.
4. Blanching is justifiable for the purpose of shrinkage before packing but not as an aid in preservation.
5. Jars that are apparently keeping may contain living organisms.

METHODS TO BE USED IN THE STUDY OF GAS CONSUMPTION OF THE ORDINARY HOUSEHOLD RANGE

Experimental Kitchen, Office of Home Economics, U. S. Department of Agriculture¹

Rough estimates as to the amount of gas used in various cooking performances, such as baking a given weight of bread until "done" (95°C. to 100°C. in center of loaf), or boiling a given weight of potatoes a given length of time, can be made by reading an ordinary meter so connected that no other gas passes through it than that for the stove being investigated, at the time that the test is made. These estimates answer many practical purposes very well.

For more careful comparative tests, in experimental work, it is necessary to have a special dial on the dry meter, so that the quantities can be read to small fractions of a cubic foot. For precise measurement of gas volumes the wet meter is most commonly used, as it has numerous advantages over the dry meter. A detailed description of the construction of meters, and discussion of the degree of accuracy attainable in their use, may be found in Technologic Paper No. 36 of the Bureau of Standards.

In some instances readings involving small magnitudes, such as decimal fractions of a cubic foot, are of significance, and it is therefore necessary to correct the observed volumes for temperature of the gas and for barometric pressure. This is the case in computing the rate of cubic feet per hour of gas consumed by each of the top and oven burners of the stove. If we find, for instance, that top Burner No. 1, when turned on full, has today used 1.25 cubic feet of gas in five minutes (i.e., 15 cubic feet per hour), whereas last month upon one occasion it used only 1.11 cubic feet in five minutes (13.32 cubic feet per hour), we must, of course, seek some explanation of this variation of 12.5 per cent between the two readings. Now if the first reading were taken in mid-afternoon of a 100°-in-the-shade day on the first week of September, when the gas in the kitchen meter showed a temperature of 99°F. and the barometer registered 29.6 inches, in order to bring the observed volume to a standard condition of 60°F. and 30 inches pressure, it would be necessary to multiply the observed volume by a correction

¹ It is a pleasure to acknowledge our great indebtedness to Mr. W. M. Berry of the U. S. Bureau of Standards for his expert advice and generous coöperation in the matter of planning and arranging the equipment used in these studies we are now making, and also for many other valuable suggestions.

factor of 0.875. But the second reading was perhaps made on a chilly October morning, with no furnace heat started as yet; temperature 60°F., barometer again 29.6 inches; correction factor for gas volume, 0.986. Multiplying 1.25 cubic feet by 0.875, and 1.11 cubic feet by 0.986, we obtained exactly the same thing in each case, viz., 1.09 cubic feet. Since many of our calculations as to necessary outlay for gas in various cooking and baking procedures must be based upon a knowledge of the amounts of gas used by various burners when burning at full capacity, or where turned down at an angle of 30° or 45°, it is necessary to determine these rates quite accurately; and for that purpose, the correction factors for gas volume, at various temperatures and barometer readings, should be made. When these corrections have been made, duplicate readings should check within 4 per cent or 5 per cent at least, even when separated by a considerable time interval. The barometric reading can always be obtained from the Weather Bureau, if in no other way.

The temperature of the gas is usually near that of the room, but this should not be taken for granted. Wet meters usually come provided with thermometers to show both the temperature of the water and that of the gas; the two readings should be within a few degrees of each other. A table, showing the factors to be used in correcting various combinations of barometer and thermometer readings to standard conditions, is given on pages 6 and 7 of "Gas Calorimeter Tables."²

The meter should be preceded by a regulator³ so that the adjustment of the appliance will not be changed by variation in the gas pressure. There should be a manometer or pressure gauge on the meter to show the pressure at which the gas is being metered, and this pressure must be added to the barometer pressure to get the total pressure of the gas.

A meter prover could be used in place of a wet meter, where not more than 5 cubic feet of gas are used in any one operation; but these are very expensive and have no particular advantage over a wet meter.

The adjustment of the stove should be such that it is capable of doing work with optimum results so far as reasonable economy in gas consumption and also in time are concerned. For example, we found that in the particular range with which we proposed to work, there was

² Bureau of Standards, Circular 65. Supt. of Documents, Gov. Printing Office, Price 5 cents.

³ The following manufacturers make satisfactory meters and dry gas regulators: Reynolds Gas Regulator Co., Anderson, Indiana; Sprague Meter Company, Bridgeport, Connecticut; Equitable Meter Company, Pittsburgh, Pennsylvania; American Meter Company, 105 W. 40th Street, New York City. Oven and other thermometers of excellent quality and in a variety of forms, are supplied by Taylor Instrument Company, Rochester, New York.

a distance of $1\frac{1}{2}$ inches from top of burner to bottom of vessel when the latter was in place. Inasmuch as recent work all tends to show that, in burners of this type,—or, indeed, of most types used for top burner cooking—a distance of 1 to $1\frac{1}{2}$ inches secures the best economy of gas, it was necessary to change the adjustment, making this distance $1\frac{1}{2}$ inches.

Then, again, it seems hardly wise to spend a great deal of time on gas consumption studies with top burners, where there is no provision for using more than 5000 to 7000 B. T. U. per hour,⁴ because, although the greatest economies can perhaps be thus achieved, the expenditure in time required for cooking is sufficiently great so that most women who can have the quicker service will hardly feel that they can forego it for the sake of the small money saving earned by so much waiting. However, this statement is not to be understood as discouraging the use of the simmering burner or other arrangements for completing, at relatively low gas consumption, a cooking process which has already been started.

The accompanying forms are used for recording observations taken during top burner cooking and oven baking, respectively. Of course, not all of these data are always needed. In many instances, observations on gas consumption during oven baking are limited to the data recorded under numbers 1, 2, 3, 5, 6, 7, and 8, although some indication of oven temperature is really necessary in order to show, for instance, why it takes as much gas to bake one pie as to bake three loaves of bread, though the latter bake longer.

It is well understood that there is a great deal of variation in individual samples of most food materials, their condition as to water and fat content, the size and surface of pieces which they present when ready for cooking, and in other ways. Furthermore it is often difficult to select a sharp end-point representing any particular degree of doneness of most foods. Consequently comparative studies of efficiency of equipment are made, whenever possible, on the process of heating water alone. The problem will then be to determine the effect of any given

⁴ For the benefit of those not accustomed to thinking in terms of British Thermal Units per hour, it might be added that (so far as our information goes) most cities using artificial gas have standards requiring somewhere in the neighborhood of 550 to 600 B. T. U. per cubic foot of gas supplied. Natural gas, on the other hand, usually runs higher, often about 1000 B. T. U. per cubic foot. This fact makes a comparison between the work of different laboratories impossible, on the basis of *cubic feet of gas used*. It explains the criticism of certain studies in gas consumption (made with artificial gas) published several years ago in the *Journal of Home Economics*, when we observe that these protests came from users of natural gas. The readings in cubic feet should, of course, be reduced ultimately to B. T. U.

arrangement upon the length of time required to bring a given weight of water from some stated initial temperature (e.g., 60°F.) to the boiling point. It will readily be noted by any observer of gas consumption with different equipments that, so far as the ordinary (covered) top-burner cooking utensils are concerned, the most important single factor in securing gas economy by household management is the *relative diameters of burner and base of utensil*, providing distance between burner and vessel has been properly adjusted. If the bottom of the utensil does not project some little distance beyond the edge of the flame on all sides, there will be an unnecessary loss of heat (hot air and products of combustion) streaming up, though invisibly, all about the kettle. We realized this fact very keenly when working with one of the so-called "gas-savers" sold in hardware stores. It does not save gas; in fact it often has the contrary effect,—for, though the burner uses the same amount of gas per hour with and without the "saver," yet the latter wrongly directs the flame, so that, when heating water in a dishpan or large tea kettle, about 25 per cent increase in time is required to bring the same amount of water to the boiling point, with the "saver" in place. When, however, an ordinary saucepan, measuring six inches across the bottom and holding 2 quarts of water, was used in these comparative tests, the efficiency was so low and the loss of heat about the sides of the vessel so great that the misdirection of the flame by the "saver" could affect no further waste. The cause of this low degree of efficiency is, of course, found in the limitations imposed upon the rate of absorption of heat by the water, due to the limited conductivity of the vessel and the small amount of surface exposed to the flame.

The *per cent of efficiency* of any given set of conditions is the final test of gas economy. In the case of water-heating, it may be determined by dividing the number of B. T. U. actually absorbed by the water (product of weight in pounds by temperature-interval in degrees F.) by the number of B. T. U. actually used, as indicated by the meter and the value in B. T. U. per cubic foot of the gas used. These percentages vary widely even in the best of our ordinary household practices: from 20 to 40 per cent would represent a good proportion of them, in case of top-burner cooking,—though the efficiency sometimes reaches 50 per cent. These facts are the basis of the statement, occasionally made, that the ordinary kitchen range as it is usually managed, wastes five-sixths of the heat supplied to it. A study of the many devices suggested for conserving gas with the kitchen range, offers a very wide and fruitful field.

FORM OF RECORD FOR STUDY OF GAS CONSUMPTION, TOP BURNER COOKING

1. Date. 2. Hour of day. 3. Barometric pressure. 4. Temperature of gas.
5. Pressure of gas. 6. Number designating burner used.
7. Description of pan or vessel used: material of which it is made; character of surface, black or bright, rough or smooth; weight, or thickness of walls; general shape; diameter at bottom, at top; excess of diameter at bottom over diameter of burner used; depth, capacity of vessel.
8. Cover used: material, weight, diameter.
9. Amount of water to be heated. Temperature of water at beginning of heating period.
10. Amount of other material to be heated, if any. Careful description or specification of such material, of amount of surface exposed. Temperature when put in to cook.
11. Distance of bottom of utensil from top of gas ports.
12. Final temperature of water; of cooked material, if any (take temperature in center of mass).
13. Time of cooking. 14. Cubic feet of gas used. 15. B. T. U. used.

FORM OF RECORD FOR STUDY OF GAS CONSUMPTION, OVEN BAKING

1. Date. 2. Hour of day. 3. Pressure of gas. 4. Barometric pressure.
5. Number designating oven used. (Description of oven should be somewhere recorded: dimensions; material of which walls are made; thickness of walls and floor; number, form, and size of burners; number of gas ports each contains; method of circulation of products of combustion—whether into or around oven. Measurements of relative humidity inside the oven would certainly be very desirable, if some one can develop a practicable method for taking them).
6. Material baked. Description of: composition, weight, number of units (rolls, loaves, etc.).
7. Preliminary period of oven heating: time, cubic feet of gas, B. T. U. used.
8. Period of baking: time, cubic feet of gas, and B. T. U. used.
9. Temperature of oven at 5 minute intervals. The graphic form of record is the best; i.e., plot curve having time intervals as ordinates and temperature readings as abscissae.
10. Weight of food material after baked. (Percentage loss in weight due to baking).
11. Temperature in center of mass of food material, immediately on taking it from the oven. (Better still, a curve showing the temperature changes, during baking, in the center of the mass of food material. Such a record can be obtained by the use of thermocouple with potentation etc).
12. Comments, or score showing quality of product as determined by baking.
13. Cost of gas per pound or per serving of baked food.

A STUDY OF THE PRESENT COST OF FOOD

JEAN KRUEGER

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During this period of rising prices, old budget percentages are not of much help to the home maker, struggling to keep her family well and happy on a limited income. Instructors in household management have likewise had readjustments to make while those in charge of practice houses are still feeling their way. In these establishments the question is not only what standard of living should be maintained, but, at present, upon what sum the students should be expected to maintain it.

In "ante-bellum" days the house management students at the University of Wisconsin Practice Cottage were given a maximum of thirty-five cents a day a person for raw food material—the equivalent of \$12.25 a week for a family of five adults. With this sum, the girls not only managed successfully, but found there was still sufficient money in the purse to enable them to entertain two guests each week at a semi-formal dinner and four guests at luncheon. This year the amount to be spent for food has necessarily been increased. With all prices soaring it was impossible in September to set a maximum allowance; so each group, realizing that a crown of laurel was due the one which succeeded in keeping its members well fed at the least cost, strove to see what the standard must be.

Since the work in household management follows the course in dietetics given in the junior year, the students' ability to plan menus is presupposed, and emphasis is placed upon the wise expenditure of energy and money, as well as upon the balanced ration. The food served has always been simple. Breakfast usually consists of fruit, cereal or hot bread, and a beverage. Eggs appear at least once during the week, and other mornings the protein is supplied by the whole milk on the cereal and the eggs in the muffins. For variation, the fruit is frequently omitted and marmalade takes its place. At luncheon, the protein may be served in a "meat substitute" dish of cheese, lentils, eggs, or occasionally fish, or in a cream soup. With the addition of a hot bread and a salad the meal is complete. A simple dessert often takes the place of the latter. Tea or cocoa appears when soup is not on the menu. For the evening meal there is meat, or a substitute for it, a starchy vegetable or cereal, two succulent vegetables—one of which may be served in

salad form if the luncheon had no salad—and a simple dessert. On “guest night” the dinner begins more formally with soup and ends with café noir.

In order that the work of the different groups may be fairly compared, the students present a full report at the end of their week at the cottage. One phase of this report gives the percentage of the total expenditure spent on various items of the food budget. This material has been organized into the following table and shows what has been possible this year in relation to the tendency during more normal times.

Percentages of Total Expenditure

| KIND OF FOOD | NOV. 1914 | OCTOBER-DECEMBER, 1918 | | | | | | | |
|----------------------------------|--------------|------------------------|----------|----------|----------|----------|----------|----------|--|
| | | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Group 7 | |
| | | per cent | per cent | per cent | per cent | per cent | per cent | per cent | |
| Beverages..... | 1.8 | 1.6 | 0.15 | 2.07 | 3.0 | 2.3 | 2.5 | 0.9 | |
| Bread, cookies, and wafers..... | 2.7 | 4.7 | 3.7 | 5.0 | 2.1 | 3.5 | 2.4 | 3.6 | |
| Butter and butter substitutes... | 9.6 | 5.3 | 8.1 | 3.36 | 8.2 | 5.9 | 5.5 | 8.0 | |
| Cheese..... | 1.5 | 2.9 | 1.7 | 1.8 | 0.9 | — | 2.1 | 2.7 | |
| Cream..... | 5.6 | 1.4 | 4.0 | 2.4 | 4.6 | 2.8 | 3.1 | 7.05 | |
| Eggs..... | 6.8 | 3.7 | 4.8 | 6.03 | 2.8 | 9.7 | 4.0 | 3.6 | |
| Flour and cereals..... | 3.9 | 6.4 | 8.6 | 1.3 | 1.7 | 7.2 | 4.4 | 5.09 | |
| Fruit, canned and dried..... | 5.9 | 3.5 | 4.9 | 4.8 | 4.2 | 2.7 | 4.3 | 6.6 | |
| Fruit, fresh..... | 9.09 | 10.9 | 8.7 | 7.9 | 5.4 | 5.9 | 12.0 | 6.5 | |
| Lard and substitutes..... | 1.5 | 2.2 | 2.2 | 1.2 | — | 2.8 | 0.9 | 1.7 | |
| Meat and fish..... | 22.2 | 21.4 | 19.0 | 24.0 | 17.41 | 16.6 | 23.9 | 19.1 | |
| Milk..... | 4.9 | 6.05 | 6.4 | 7.0 | 10.6 | 8.0 | 7.6 | 6.2 | |
| Miscellaneous..... | 6.2 | 13.38 | 9.6 | 12.29 | 11.77 | 11.1 | 7.5 | 1.2 | |
| Oils..... | 1.2 | 1.34 | 3.8 | 2.0 | — | 0.25 | 1.0 | 0.05 | |
| Sugar..... | 3.4 | 0.44 | 0.95 | 0.97 | 2.55 | 2.07 | 1.7 | 3.4 | |
| Vegetables, canned and dried.... | 3.5 | — | 3.6 | 6.6 | 9.59 | 8.4 | 4.5 | 11.5 | |
| Vegetables, fresh..... | 9.06 | 13.76 | 12.3 | 10.5 | 11.47 | 7.8 | 12.5 | 11.7 | |
| Total cost per week (dollars)... | 12.25 | 16.40 | 14.49 | 15.645 | 14.525 | 15.54 | 16.275 | 16.45 | |

As is to be expected, the per cents in many cases are higher for 1918 than those for 1914. In the case of meat and butter, the reverse is true in spite of the steady rise in price of these commodities. This is due largely to the increased use of substitutes for both items. The lower per cent for butter is also due to a continued observance of the “breadless meal” at the cottage. Since bread at dinner is really a case of “coals to Newcastle” and since conservation measures have taught us to do very well without it, the girls think that continuing the habit is an easy way of cutting expense. The percentages in general vary with the individual tastes of a group, but in some cases the variance is due to a

lack of ability to cope with the situation. Those groups spending the most seem to have done so because of lack of wisdom in buying. Groups 1 and 6, for instance, paid more for meat and fresh fruit than was necessary for the good of the family. Group 7 was extravagant in its use of cream as well in paying seventy-six cents a pound for butter. The proportion spent for butter by the girls in Group 2 was even greater, but they were so economical along other lines that their total expenditure was below average. Thus the work of each group may be analyzed. However, many of the differences are what one would expect to find in comparing a number of food budgets.

The following tables, also organized from the weekly reports, show the total results of each group's experiment.

Cost of Raw Food

| DATE | NUMBER OF PLATES SERVED | | | COST OF RAW FOOD PER 5 DAYS | COST PER PERSON PER DAY | COST FOR FAMILY OF 5 PER WEEK* |
|------------------|-------------------------|--------|-------|-----------------------------|-------------------------|--------------------------------|
| | Regular family | Guests | Total | | | |
| October 21..... | 75 | 9 | 84 | \$13.236 | \$.471 | \$16.40 |
| October 28..... | 75 | 7 | 82 | 11.372 | .414 | 14.49 |
| November 4..... | 75 | 6 | 81 | 12.1219 | .447 | 15.645 |
| November 11..... | 69 | 10 | 79 | 11.0147 | .417 | 14.525 |
| November 18..... | 75 | 10 | 85 | 12.609 | .444 | 15.54 |
| November 23..... | 75 | 10 | 85 | 13.221 | .465 | 16.275 |
| December 2..... | 75 | 6 | 81 | 12.756 | .47 | 16.45 |
| January 6..... | 77 | 2 | 79 | 12.285 | .477 | 16.695 |
| Average..... | | | | 12.32 | .45 | 15.75 |

Cost of Prepared Food

| DATE | COST OF FUEL USED IN FOOD PREPARATION | | ICE | COST OF PREPARED FOOD PER 5 DAYS | COST PER PERSON PER DAY | COST FOR FAMILY OF 5 PER WEEK* |
|------------------|---------------------------------------|-------------|-------|----------------------------------|-------------------------|--------------------------------|
| | Gas | Electricity | | | | |
| October 21..... | \$.66 | \$.15 | \$.15 | \$14.196 | \$.507 | \$17.745 |
| October 28..... | .907 | — | .075 | 12.354 | .45 | 15.75 |
| November 4..... | .925 | .017 | .40 | 13.467 | .498 | 17.43 |
| November 11..... | .462 | .079 | .375 | 11.93 | .453 | 15.855 |
| November 18..... | .59 | — | .15 | 13.349 | .471 | 16.485 |
| November 23..... | .66 | .118 | .15 | 14.149 | .499 | 17.465 |
| December 2..... | .682 | .118 | — | 13.56 | .50 | 17.50 |
| January 6..... | .65 | .10 | — | 13.0358 | .507 | 17.745 |
| Average..... | | | | 13.25 | .48 | 17.00 |

* Estimated, since girls remain at cottage but 5 days.

Some groups have been much more successful than others, but, from the figures obtained from their united efforts, it appears that 45 cents per day per person—or about \$15.75 per week for a family of five women, all of whom are grown—is more nearly the amount needed under present conditions for raw food material.

It is hoped that this study, which is offered merely as a basis of comparison for those having similar work under their direction will result in reports of the work being done in other practice houses.

COÖPERATIVE RESEARCH IN EXPERIMENTAL COOKERY

At the recent meeting of the American Home Economics Association several members of the Science Section interested in experimental cookery met with Miss Denton, representing the Office of Home Economics, and Miss Blunt, Chairman of the Science Section, to discuss the possibility of coöperative research in this work. This is a development of previous plans made both by the Science Section and by the Office of Home Economics. Dr. Langworthy, of the Office of Home Economics; Miss White, President of the American Home Economics Association; and Miss Harris, Chairman of the Home Economics Section of the American Association of Agricultural Colleges and Experiment Stations, have been consulted, and the present project will be undertaken with the coöperation of these organizations. It is obvious that we need coöperation for at least two purposes:

(1) We need to work out standard methods of procedure. Ask those who have worked on the subject what they think of Master's report, in the *Biochemical Journal*, that soaking legumes over-night does not decrease the time required for cooking to any considerable extent. One worker remarks: "If she had used tap water she would have found that soaking decreased the time of cooking very greatly." Another observes "With as hard a water as we have soaking increases the time of cooking instead of decreasing." Equally contradictory results have been reported in many other problems. It is evident that results are contradictory only because not all of the variants involved have been recognized. Workers in agriculture, in food chemistry, in bacteriology, and in other kinds of practical research have developed standard methods. It is time for us to do it.

(2) We need to exchange experimental results. Only those who have talked with workers representing widely scattered institutions can realize how much good material is locked away in the records of home economics workers all over the country. A piece of work possibly only partially finished by one investigator might be dove-tailed into that of others, so that a really big product would result from the combination.

Are the members of the Association in favor of such coöperation? Will you subscribe to the following plan?

(1) To choose a few lines of work for emphasis before the June meeting of the American Home Economics Association. The lines suggested are listed in paragraph 3 below.

(2) To ask everyone who has done work on these subjects to send a full report before May 28 to the Chairman of the Science Section of the American Home Economics Association who will, in turn, send the reports to a sub-chairman for each subject. The Chairman and the various sub-chairmen, of course, agree to make no use of the results without the consent of the person submitting them.

(3) In order to assist in the making of these reports by the different investigators, to have suggestive outlines formulated by some one or more workers from those they themselves use, and to have them sent to all interested in the same line of work. Of these outlines Miss Denton of the Experimental Kitchen in the Office of Home Economics has prepared those on "Cooking of Dried Vegetables and Fruits," "Jelly-making," "Records of Gas Consumption in Top Burner Cooking," "Records of Gas Consumption in Oven Cooking;" Miss Elizabeth Miller of Iowa State College has prepared that on "Cooking of Fresh Vegetables;" Miss Denton and Miss Miller are coöperating in the making of outlines for "Record of Operations in Cake Making," and "Record of Operations in Pastry Making;" and Miss Blunt and Miss Denton are coöperating in the outline on "Fat Absorption and Changes in Fat in Frying." One of Miss Denton's articles appeared in the March JOURNAL, and a second is in this number.

(4) To bring together the various reports for discussion at the June meeting so that new points for investigation may be brought out and the possibility of joint publication considered.

If you approve of this plan, please send to the Chairman of the Science Section for such outlines as you desire, and also send your own report to her. This letter is being sent to all those who have recently reported to Dr. Langworthy.

AGRICULTURE OF THE HIDATSA INDIANS—AN INDIAN INTERPRETATION¹

The author collected his information during the summers of 1912-1915, at Fort Berthold reservation, from a Hidatsa woman, born about 1839, who prepared the food for her family, as well as tilled the soil. Much of this volume is devoted to characteristic dishes evolved from the agricultural products.

Corn, beans, squashes, and sunflower seeds played an important part in the diet of the early Hidatsa Indians. The sunflower seeds were parched and pounded into a meal which was cooked with parched corn meal, dried squash, and beans, and constituted an important winter dish which they designated as "four-vegetables, mixed." Sunflower-seed meal, because, of its high oil content, could be squeezed into balls. These balls were wrapped in pieces of buffalo heart skin and were used by the Indian warrior in much the same way as sweet chocolate is used by the modern soldier. Small fresh squashes were boiled whole with a small amount of water in earthen pots covered with sunflower leaves. The seeds were also eaten, and taste, according to the narrator (Buffalobird woman), much the same as peanuts. Quantities of squash, and some of the squash blossoms, were eaten or dried for winter use. The squashes were sliced and the squash rings threaded on willow spits and hung in the air to dry. After three days these were removed from the willow spits, strung on dried grass, and hung in the lodge until ready for storing. When using the dried squash the Indian woman cut a piece of the string as long as from her elbow to the tip of her thumb, tied the string together, and dropped the ring of squash into boiling water. When done it was lifted out by the string, mashed with a horn spoon, and the string removed.

Of the several varieties of beans used, the narrator prefers the black bean, although of late years she says she has grown mostly white beans, since it is easier to sell them to the white men. The beans were cooked, in earlier times, with buffalo meat or bone grease and in combination with other foods. The Hidatsa cultivated nine distinct varieties of corn, all of them used as food. Even the black masses of corn smut were eaten after drying and cooking with the half boiled dried corn. The fresh green corn was boiled or roasted on the cob or shelled, pounded in a mortar, and boiled with beans or made into so-called green corn bread by baking the corn pulp in corn husks. The corn was dried by boiling on the cob and allowing the cobs to dry overnight and then shelling, and the drying continued. The ripe corn was made into hominy or was parched and ground into a meal. This meal was boiled with water to form boiled corn balls or it was cooked with beans or dried squash.

The seasoning used in many of the native Hidatsa dishes was obtained by burning corn cobs and collecting the crust that formed on top of the ashes.

¹ G. L. Wilson, *Bul. Univ. Minn.* No. 9 (1917), pp. viii + 129, pls. 5, figs. 40.

FOR THE HOMEMAKER

THE HOUSE SPEAKS¹

ARTHUR D. DEAN

Teachers College, Columbia University

I am glad that I am here with you all. It is good to hold within myself those who can fill me with joy, contentment, and purpose. I am grateful for the expressions of clear thinking, clean doing and child love of those about me. I am joyous that the voice of youth passes my doors mellowing me in my old age and recalling the days' when I was built by youth. I am pleased with my natural setting of trees, the odor of sweet grasses and the bloom of flowering shrubs. I am fond of listening to words of endearment, of watching little marks of affection, of interpreting signs of understanding between that big fellow John and his mate, bright-eyed Vida, and little John junior.

I am always watching the people in this house—those who come and go, those who seem to come and never really go, those who go without really ever coming, and those—three—good people who always stay.

Everyone speaks of me. Some say I am cute—odd—different. Some say I am pretty—attractive—homey. But those three about me just say "Home."

But I insist that I am more than odd, attractive, or pretty. I am a message—a message of sincerity, simplicity, service.

I am a prototype of the habitations of Colonial New England. My ancestry held sturdy, serviceable, sincere people. Today I again hold such people. My very bones are hewed from logs; my heart is a huge fireplace of warmth, of crackling forces, of brilliant coloring; my hands reach through the doors and welcome the passing stranger to a share at our simple board.

¹ Reprint of the booklet by the same name.

The author's note on his booklet is "The prototype of a New England home of Colonial days built in that north country of the upper peninsula of Michigan spoke from out of its heart to me one soft summer evening in July, 1913."

How hard my ancestry struggled to hold its people to the manner born—of integrity, of purpose, of simplicity. But we were called cold, puritanical, set in our ways. We were made over, modernized, brought up to date. My roof—I should say my head—was filled with a lot of stickouts until I leaked the waters of the heavens. I was plastered over with side additions until I was scattered over the ground. My heart was removed and in its place there appeared a gas log. My ribs became little sticks and it seemed that I would break under the load. They filled me with gaudy stuff and flaunted the cost tag before my eyes. They filled my corners with gim-cracks. They closed my eyes with lace curtains. They covered my feet with strange and fearful weavings. They tied my hospitable hands with formalities and receptions.

I lost my identity completely. They crowded me with other disappointed ancestors and called me an apartment. People still came. They still went. But no one stayed. The theatre was their round table. The street corner was their door step. The vaudeville was their prayer. I became a bedroom and a bath. I was to be used when everything else in town was shut up. Oh! the ignominy of it all.

But now I am again in the world of living things. A thousand miles from my birthplace I again softly whisper my message in this north country where city throngs are yet to come and where I can whisper—simplicity, sincerity, purpose.

I want these people who speak of me as home to know how much they fill me with their strong life purpose—their humanness and their understanding. When they built me they built what they were themselves—simple, strong, straight. They, like me, are open, clean, straight lined.

We shall grow old graciously. I shall shed the rain and avoid decay. They will throw off discontent and not harden with the passing of youth. I shall take on the rich color of age. They will gather the soft tones of repose in their faces yet to age.

Together we bring up the youth in this place—the older two by words and deeds; I by silent example. I will let the soft air of summer sweep across the rooms of childhood. I will guard the boy from the winter's chill. I will hold up my straight lines that he may see the straight way. I will show him my simplicity that he may learn sincerity. I will lay before him my simple decorative effects that he may feel the importance of a touch of the esthetic on a back-ground of solidarity. I will stand firm on my foundations that he may know the value of

integrity. I will line my walls with books that he may know of the world of thought and action. I will have space for instruments of music that he may be spiritually strengthened in the world of endeavor. I will withhold from extravagance that he may learn the value of the necessary and the simple.

I live for those two who built me. I live for the child whom together we are shaping into high ideals of service rendering—rendered with joy, simplicity, and purpose. I am glad that I am here. May they who hold me with papers legal know that I hold them as their Home.

THE HOME AND THRIFT

The school may do much to teach thrift among the young, but it cannot do as much as the home. In this the nursery of the nation, the fundamental things of life are instilled into the mind of the child. In proportion as this is done well, or badly, will the next generation make valuable citizens.

The people of France, Belgium, and Holland are famous for their thrift. How did they become so? Through the influence of the home. Necessity, combined with good sense, years ago taught the fathers and mothers in these countries to be thrifty, and the lessons of thrift have been faithfully handed down from one generation to another.

The rising generation will be thrifty if thrift is taught and practiced in the homes of this country. The school may do much to promote saving, but it cannot do nearly as much as the home, since the former only has the child for a few hours a day.

Department of Information, Ottawa.

“Waste has no right to exist anywhere under any circumstances.”

BUDGET MAKING

S. AGNES DONHAM

The Garland School of Homemaking, Boston

Early in her experience with teaching the distribution of the family income, the writer became aware of the fact that the "ideal percentages" could be ideal only within certain very restricted limits. An income above five thousand dollars offered wider possibilities in savings and higher life; operating easily outran its percentage limits, though its component parts still seemed legitimate, even wise, expenditures. Food, too, dropped below its limit, and the cost of shelter was frequently much below or far beyond the amount of the ideal, according to circumstances of environment or standards.

When the income was below three thousand dollars, the cost of food enough to nourish the family at once exceeded the ideal and again the percentages served only as a point from which to depart.

Added to these difficulties was the fact that the untrained budget maker is afraid of percentages. They appear like a ferocious beast ready to devour all attempts at planned distribution of the income. However, it was not until war time, with its attendant changes in the cost of living necessities, that the following method of teaching the budget was evolved.

It has been successful with girls whose kind had stumbled along with percentage divisions very unhappily, and it has frequently proved helpful to housewives who would have fled from the old methods in dismay.

Starting with the enumeration of all known expenditures for a family of four or five, these are grouped under the five heads made familiar by Mrs. Richards. The writer earnestly pleads for the retention of these, and believes that the whole subject of income distribution would be simplified if every teacher and housewife would adopt the same general headings and fit subdivisions to their individual needs. It is only by such a course that the actual experiences of budget makers will ever be available for comparison with others, and profitable for study.

Taking then the five general headings—Food, shelter, clothing, operating, and higher life—the class discusses first the arrangement of all expenditures under these divisions.

Food: All bills for food and ice, whether consumed at home or at work, or in a public eating place.

Shelter: Rent and business carfare, or interest on investment, taxes, house repairs, business carfare, and fire insurance.

Clothing: All clothing, new materials, sewing materials, making, repairs, and cleaning.

Operating: Heat, light, water, service, laundry, household supplies, telephone, inside repairs, replacement and repair of equipment, stationery, postage and express, small miscellaneous house expenses, newspaper, incidental carfare, etc.

Higher Life: *Health*—doctor, dentist, oculist, optician, nurse, medicine, and supplies. *Church dues.* *Culture*—theatre, concerts and lectures, books and magazines, travel. *Education*—schools, public or private, special lessons, text books. *New equipment.* *Philanthropy.* *Savings.* *Social life*—club dues, recreation, entertaining, gifts.

The fact is brought out that food, shelter, and clothing are the essentials; that most expenses for operating, outside of heat, light, and water, are only possible when there is a margin; that money spent for higher life is also spent from the margin; that expenditures for the three essentials increase with an increase in the amount of the margin; and that in each division there are expenditures which might as properly be placed in the last—higher life, or region of choice—were it not that it is useless to divide expenditures into absolute essentials and margin, for one is at once confronted with the knowledge that essentials for one family are luxuries for another. Arbitrary division must be made and it has over and over proved desirable to make it upon the basis of natural division rather than to split hairs and try to determine what portion of the amount paid for rent is essential for shelter, and what portion is spent to gratify a desire for comfort or enjoyment. When the amount spent overruns its apportionment, however, these facts must be considered in making a decision as to whether the expenditure is justifiable.

Having the distribution of expenditures well in mind and some knowledge of the actual costs which must be met from a comfortable income, the class is ready for the analysis.

Study of actual incomes of which some of the details of expenditure are known proves far more impressive and effective than the analysis of arbitrary amounts with no actual data except a general idea of costs in a typical community. It is here that the plan for division without the use of percentages is developed.

Psychology is a positive factor in any method of procedure, and for some reason the ordinary human being finds it easier to save if he plans expenditures without reference to saving. To meet this quirk in reasoning, the savings are treated as a separate sum, and the remainder of the income divided as if it were the whole. The plan necessitates a decision as to the amount the family may expect to save, and then the division of the remainder into five equal parts, each of which represents the apportionment for one of our headings.

To illustrate this graphically, draw a circle, write above the circle the amount to be saved, divide the circle into five equal parts, name each part, and write in it the amount of its apportionment. (See figure 1.) Each class of expenditures is considered worthy of its share of the full income, and at the beginning of the discussion the groups are treated as of equal importance.

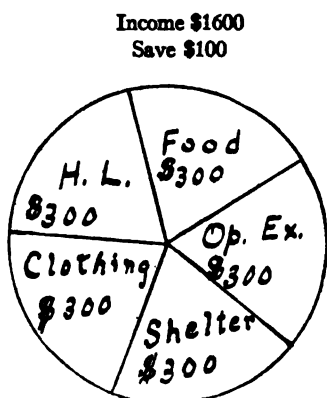


Fig. 1

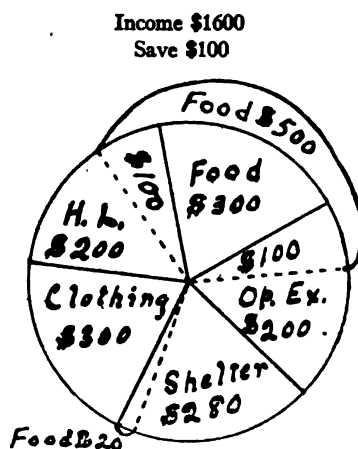


Fig. 2

The fact is readily brought out that from an "existence income" food will be purchased before any thing else, that shelter will be the second consideration, that clothing enough to cover the law costs little, that heat and water are the operating expenses first incurred, and that with a very small income there is little or no margin beyond what is required for these essentials.

The expenditures for food are the first consideration. With a small income where food demands nearly all of the money, the figures furnished by the Boston Dietetic Bureau are used as a basis of reckoning. The minimum amount required according to the ages and work of the

members of the especial family under consideration is taken as a starting point. In several cases it has been possible to fix \$10 a week for the round figure necessary to purchase adequate food for the families under discussion. It is at once evident that the \$1500 family must use from its margin to provide food enough to nourish, and this is done usually by deciding that one hundred dollars must be taken from operating expense and one hundred from higher life.

Discussion sometimes leads to a division of opinion as to the source of the other \$20, some preferring to reduce the rent, others claiming that in most communities \$300 is the least amount for which safe shelter can be obtained. It usually ends in taking from shelter if it can be shown that the family has at present safe shelter at lower cost than its apportionment allows, otherwise taking from higher life, and the circle is again changed to correspond to the new apportionment. (See figure 2.) With a very small income the space for higher life is soon nearly taken up by the new apportionments, the space for operating is cut to the amount necessary for heat, light, and water; and the apportionment for clothing is greatly reduced, sometimes disappearing altogether if clothing is given to the family.

If, as frequently happens, the amount necessary for *adequate* food, *safe* shelter, *essential* operating, and *necessary* clothing has used all the circle, it is evident that too much has been set aside for savings, and a new chart is made, starting with smaller savings.

The questions which puzzle the beginner, without definite knowledge of former expenditures, are in regard to the amounts necessary for operating, higher life, food, and clothing. Lists of questions in regard to cost of fuel, light, water, rents, taxes, insurance, telephone service, interest, income tax, service, are given to the class and information is obtained from friends and any source possible. In some cases visits to real estate agents have solved disputed questions as to rents to be paid.

When all the information possible has been gathered together the probable expenditures in each group are subdivided under three heads: fixed charges, charges possible to estimate, and charges necessary to limit; for example, in the shelter group, rent is a fixed charge, business carfare may be a fixed charge, taxes are possible to estimate, interest is a fixed charge, outside repairs are necessary to limit.

With \$300 a year to spend for shelter, rent at \$20 a month will equal \$240, and business carfare will be estimated at \$50, giving a total of \$290.

If the house is owned, interest at 5 per cent on \$2000 will be \$100 and will be a fixed charge; taxes may be estimated at \$60; and carfare at \$50, which would leave \$90 for repairs, a charge necessary to limit. In the same way it is possible to build a foundation for each group of expenditures. When the fixed charges and estimates equal the apportionment the other possible expenses will necessarily be omitted or must come from another apportionment; but when, as in the case of higher life, most of the expenditures fall under the head of charge necessary to limit, it becomes a game in choice of values.

Students frequently ask what is to be done in case of an illness which consumes more than the limit set. The answer is obvious, one must either use savings or reduce expenditures for the less essential factors in that group. The same thing exists throughout the budget. If one departs from the original plan it should be because increase in income makes it possible, or by making a conscious change, relinquishing some planned expenditure entirely or reducing the quality or quantity purchased. Such changes should always be made within the group, if possible.

The advantages of this plan and its graphic illustration are, first of all, that each group of expenditures is given due regard; second, that no group can entirely disappear without consciousness; third, that it has features which satisfy the psychological attitude of many people who are afraid of percentages; fourth, that it shows very plainly when a family is trying to save more than the size of the income warrants. It is especially useful in showing faults in budgeting which the beginner often cannot recognize by the percentage method.

With sufficient food and safe shelter always considered first, and suitable clothing and essential operating next, higher life is still not ignored if there is any margin at all.

One most important result is the formation of conscious standards for each group of expenditures. These should result from the making and use of any good budget; but it is a favorite theory of the writer that no good budget is ever worked out until the maker has first formulated his standards and, by comparison, eliminated those which are unworthy and substituted better—or, in other words, measured standards by each other and fitted them to the income so that one group is not unduly considered at the expense of another.

SOME PRE-WAR PRICES, 1860

AND THEIR INCREASE

Many comparisons have been made between the cost of living at this time and shortly after the Civil War. It is worth while, when we are discontented, to remind ourselves again of the change in prices that took place at that time.

The following record illustrates the low prices that prevailed before the war:

FROM AN OLD ACCOUNT BOOK (1860)

February

| | |
|-------------------------------------|--------|
| $\frac{1}{2}$ gal. molasses..... | \$.25 |
| pk. potatoes..... | .25 |
| 4 lbs. butter..... | 1.12 |
| 50 lb. cornmeal..... | 1.25 |
| 10 $\frac{1}{2}$ lbs. shoulder..... | 1.08 |
| $\frac{1}{2}$ lb. tea..... | .31 |
| quart oil..... | .31 |

March

| | |
|----------------------------------|------|
| $\frac{1}{2}$ gal. molasses..... | .31 |
| 5 lb. beef..... | .70 |
| 11 lbs. sugar..... | 1.00 |

April

| | |
|----------------------------------|------|
| bbl. flour..... | 7.25 |
| 3 doz. eggs..... | .45 |
| 2 lbs. coffee..... | .40 |
| $\frac{1}{2}$ gal. molasses..... | .28 |

May

| | |
|----------------------|------|
| 50 lbs. of meal..... | 1.12 |
| 2 lbs. butter..... | .50 |

After the war, flour went as high as \$22.00 a barrel in 1865. Sugar sold at 3 pounds for \$1.00. Butter rose from 20 or 25 cents a pound to 75 cents. Cereals, vegetables, teas, and coffee doubled in price, and pork that sold at wholesale for \$20.00 a barrel went to \$60.00. In 1864 coal was \$19.00 a ton and kerosene 90 cents a gallon. Spool cotton was 30 cents a spool, unbleached sheeting 40 inches wide was 60 cents a yard, muslins that were 6 $\frac{1}{4}$ to 12 $\frac{1}{2}$ cents rose to 75 cents, and some of them were withdrawn from the market at that price.

MINERAL MATTER IN THE DIET

DORA L. EARL

The time is here for me to save
The juice from off the greens,
For herein lies the best there is
In spinach and string beans.

Without the mineral in my food
I could not life retain;
And so I'll save the part of it
That oft goes down the drain.

I'll eat the beet and turnip tops,
The dock and dandelion,
And all the fruits and vegetables
That I can get my eye on.

Then, too, I'll have both milk and eggs
For they are rich and rare;
And then to save the mineral,
My potatoes I'll *not* pare.

But all the breads and breakfast foods
I must not here omit;
For when from unhulled grains they're made
They've mineral quite a bit.

The all important point is this:
I must have mineral matter,
And I'll eat anything that has it,
From purslane to hard water.

EDITORIAL

Standardizing Research Work in Home Economics. The Science Section of the American Home Economics Association deserves much praise for forwarding the scheme already undertaken by the Office of Home Economics in standardizing methods of procedure for research work in experimental cookery. Many have felt for a long time that much good work is failing of part of its purpose because it has not been brought together, interpreted, checked up, and translated into terms that make it usable for practical purposes. The experimental kitchen of the Office of Home Economics, as is indicated by the records already published in the JOURNAL, is doing much to further such research, but it can accomplish still more in coöperation with the Science Section, and with the many workers and departments that for a long time have been working on problems, obtaining results to their own satisfaction, but with no definite means of communicating them to others. It is surprising frequently to find that some problem, definitely and satisfactorily solved in one institution, has been taken up as new work at another, without any knowledge of the fact that experimental work has already been carried on.

The JOURNAL particularly welcomes this move. It has often been difficult to obtain papers with the work sufficiently authenticated. Occasionally work has been published that might well have been repeated and checked by further work before it was brought to the attention of our readers. This movement will give an opportunity for better formulation of results and for more legitimate conclusions. We wish it all success.

Home Economics Contributions to the Fifth Liberty Loan. All home economics departments in public schools and in higher institutions are invited to make a contribution to the Ellen H. Richards Memorial Fund of the American Home Economics Association, in the form of a subscription to the Fifth Liberty Loan. The Richards Fund has received similar contributions during each Liberty Loan Campaign, and several institutions have already planned to raise a subscription for the Victory

Loan and contribute it to the Richards Fund. Any sum may be sent in, and it will be used towards buying bonds to be added to this Fund.

The Richards Fund of the Association now amounts to over \$5000 and its income will be used the next college year to support home economics scholarships in Chicago University and in Teachers College, Columbia University.

Victory Loan Contributions should be sent to the American Home Economics Association, 1211 Cathedral Street, Baltimore, Md.

COMMENT AND DISCUSSION

AN EXTRACT FROM A LETTER

You would be surprised if you knew how much time and trouble and work I have spent in endeavoring to find some one magazine devoted to "What American Women are doing for American Women and Children." However, I am quite happy since your letter came, with the two copies of the JOURNAL OF HOME ECONOMICS. All in this household have appreciated the contents of the JOURNAL and will subscribe.

During all my travels and peeps into homes from Panama to Patagonia, I have realized that home economics is a study and practice that can bring health and happiness into many homes and countries south of us. When I was invited to speak to a College Alumnae Association, I chose as my subject Some Educational Needs of Girls in South America. That body of women is considering giving a scholarship for a South American girl to be educated in our country and for one girl from the United States to have an exchange scholarship and go to South America. They have languages, art, and culture—we have training and education. They, too, are appreciative of the freedom and joyousness of the woman of Young America.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Marketing and Housework Manual. S. AGNES DONHAM. Boston: Little, Brown & Co., 1917, pp. 235. \$1.50. By mail of the Journal, \$1.60.

The Home and Its Management. MABEL HYDE KITTREDGE. New York: The Century Co., 1917, pp. 385. \$1.50. By mail of the Journal, \$1.62.

The young teacher who has been asking "How shall I teach household management?" is finding help in two texts that offer a key to the solution of some of the perplexing problems of the housekeeper. "Marketing and House Work Manual" comes from the hands of an experienced teacher and represents a carefully developed scheme of instruction presented in concise statements and easily interpreted charts. The extensive marketing charts dealing with choice of meats, fish, vegetables, fruits, and groceries are a real contribution to the student and young housewife, for they give illuminating suggestions as to choice, care, and use of foods. The housekeeper who has become familiar with these facts through long experience seldom realizes how extensive this unexplored field seems to the uninitiated and how much simple guidance of this sort is needed. The author has for the most part been successful in her effort to keep "to the short, exact statement that there need be no superfluous words to bewilder the inexperienced and irritate the hurried," but brevity of statement has resulted in awkward construction in one or two places.

"The Home and Its Management" covers much the same field in its first two hundred pages. The book was prepared for those who live in modest homes with a

full understanding of their circumstances and problems. An attempt has been made to adapt the information given to rural as well as urban conditions. In the latter half of the book there are chapters on the care of children, food for infants, and home care of the sick. Directions given are so simple that the big sister can follow them in the work that often falls upon her in the home. The truth of a few statements may be questioned and the earnest teacher who has endeavored to convince her students that an understanding of principles, a knowledge of the effects of heat on foods, and accuracy in measurement will help her in securing skill in cooking, will resent the statement that "the only way to learn how to cook is by cooking day by day, making mistakes, producing unexpectedly good results, blundering along, working, working, working, until finally you instinctively know the taste of the pudding before you begin to combine the ingredients." However, the very definite rules for cooking given convince the reader that Miss Kittredge knows the value of fundamental principles and can present them in a convincing way.

CARRIE LYFORD,
U. S. Bureau of Education.

The Study of Fabrics. By ANNABELL TURNER. New York: D. Appleton & Co., 1918, pp. 206. \$1.75. By mail of the Journal, \$1.85.

Since women are largely responsible for the expenditure of the family income, it is most important that they should be trained to meet the responsibility in the most efficient way. This, of course, means they must be trained to spend wisely, to know

when they are receiving the value of the money expended. "Study of Fabrics" will be found to be of considerable value in training along this line.

A discussion is first given of the production of the raw materials and the manufacturing processes of each of the common textile fibers—cotton, linen, wool, and silk. This discussion is not detailed enough to give a broad definite knowledge such as a college student of textiles and clothing would need, but would meet the needs of the average homemaker.

The portion of the book that is of most value is that devoted to the physical and chemical properties of these fibers and the practical household tests that may be given to the woven fabrics to aid in the detection of adulteration, the judging of quality, the care and laundering of the various fabrics, the hygiene of clothing, and the economics of buying.

In the chapter on the economics of clothing are many very valuable suggestions as to when and how to buy. Legitimate reasons for reduced prices are given and the suggestion that, outside of these certain special sale values, the bargain counter should be avoided. Advantages and disadvantages of cash, charge accounts, and installment methods of buying are included in the discussion.

Due to the direct, simple, and untechnical manner in which these subjects are treated, the book cannot fail to be of real value to the homemaker.

Iva BRANDT,
Iowa State College, Ames.

Food Preparation. By BETH WARNER JOSERAND. Peoria, Ill.: The Manual Arts Press, 1917, pp. (Part I) 148, (Part II) 142. \$1.25 each.

Food preparation is described by the publisher as a combined laboratory guide, text book, and notebook for use by high school classes in domestic science.

We agree heartily with the author in her statement that there is often a great loss of

time on the part of both teacher and pupil in the dictation and blackboard method of presentation, also that the permanent and well arranged record of laboratory work should be of value to the pupil. This loose leaf book with detailed directions for work and ample space for interlinear observations offers itself as a solution of the problem, and those who have struggled with high school notebooks will welcome its help.

The order of material is somewhat unusual, but, of course, there is no reason why it should be followed exactly in any given school. A much more serious objection can be raised to the fact that in a book entitled *Food Preparation* it is not until the forty-seventh page that there is any actual handling of food. With a skillful teacher this need not affect the interest of the class, but under some circumstances it would prove disastrous. Chapter one is entitled "Equipment and Rules," but, since rules are only of value when the need for their help arises, would it not be as good pedagogy to put them in the background where they can be called up, one by one, as needed? Even more questionable is the outline of digestive processes in the same chapter which uses nomenclature entirely unfamiliar to the student in discussing substances which she does not know exist.

There are many inaccuracies of statement and some of the material is out of date. For example, one experiment is devoted to proving the presence of albumen in milk by the formation of skin on heating, and the old factors are used in estimating food values. There is a good deal of obvious material included and the list of utensils given at the head of each lesson seems unnecessary for high school students.

In spite of the difficulties which would arise in attempting to depend on the book as a text, there remain the advantages which it offers as laboratory guide and note book. In the hands of a teacher who knows how to use it, the book should prove very helpful.

FRANCES L. SWAIN,
Chicago Normal College.

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NEWS FROM THE FIELD

The Meeting of the American Home Economics Association, held in Chicago in connection with the Department of Superintendence, N. E. A., February 28-March 1, 1919, was well attended, with from 200 to 250 present at each session, and 179 registrations filed.

The program presented by the Program Committee, Mrs. Henrietta Calvin, chairman, covered on the first day several of the main topics that are of especial immediate interest—child welfare, thrift, Americanization, social rehabilitation. The morning session was presided over by Miss Jenny Snow, Supervisor of Household Arts, Chicago. The opening address by the president, Miss White, outlined the opportunities that are before the home economics workers today, and pointed out the way in which those opportunities should be used. The address made each one who heard it feel her individual responsibility, and inspired each one to assume her share of the burden of work. Mrs. Norton, the editor of the *JOURNAL*, who is for a time with the Savings Division of the Treasury Department helping with its Thrift Campaign, presented the cause of Education in Intelligent Spending. Miss Sally Lucas Jean, Director of Field Work, Child Health Organization, New York City, told of the ways in which that organization is improving the health of the children in New York, and of the practical applications they are making of the teachings of the domestic science teacher. Her speech was full of "human interest."

Dean Talbot of the University of Chicago presided at the afternoon session. The first address was by Miss Breckinridge, who showed some ways in which we may learn from the foreigners quite as much as we can teach them, and who plead for right standards of living, rather than American standards. Miss Winslow showed how home economics workers should be trained for effective social work, and what kind of positions are open to them. Miss Ethelwyn Miller of Iowa State College discussed some of the problems of home economics education. Both papers were discussed.

The general topic for Saturday morning was "Wanted—A Program for the Advancement of Home Economics Education." Miss Snow presented so effectively her plea for changes in the elementary program, and the difficulties in carrying these out, that the Association passed a resolution asking the N. E. A. to put her on their general program at their annual meeting, to give the same address. Miss Carlotta Greer of the East Technical High School, Cleveland, Ohio, presented some high school problems, and Miss Grace Schermerhorn, Director of Cooking, Department of Education, New York City, outlined the school lunch work in New York, and its possibilities. Mr. George B. Masslich, Principal of the Wells School, Chicago, gave a vivid account of some experiments in that school on a penny portion lunch, and on a school savings bank. Dr. Foght, of the Bureau of Education, Washington, who was not able to be present on Friday as announced, made an address on Education of Women for Rural Life.

The afternoon session dealt with Relationships. Those between the Smith-Hughes State Supervisor and the City Supervisor were shown by Mrs. Martha French, State Supervisor of Home Economics for Michigan; those between the Urban Extension Worker and the City School Supervisor by Miss Gertrude Van Hoesen of the Office of Extension Work, North and West, Department of Agriculture; and the relation between Home Economics and Public Health by Miss Emma Wardall, University of Illinois. Through the discussion of papers both morning and afternoon, an opportunity was given for the audience to become

acquainted with many of the well known leaders in home economics who were not on the formal program.

The meetings were distinguished by their breadth of interest. Great appreciation was expressed for the addresses given, and the whole planning of the program. Two meetings of the Council were held.

The Association was entertained at tea on Friday afternoon by the Ella Flagg Young Club at the rooms of the Chicago Woman's Club. On Friday evening, through the courtesy of Dr. Blunt, the Association met for dinner at the College Club.

Omicron Nu News. *Alpha.* This year we have found it an excellent plan to have a combination of social, literary, and business meetings every two weeks. We listen to the reading of a good article or short story and discuss society matters. This brings us in closer touch with each other and helps to keep up a strong interest in the aims and purposes of Omicron Nu.

On February twelfth we initiated eight new members,—six juniors, one senior, and one faculty member.

Epsilon. When the United War Fund Campaign was in progress, Epsilon girls subscribed three-fourths of the amount of money in their treasury, about \$10.

During the influenza epidemic, the girls were busy in the emergency hospitals. While the home economics faculty and girls did much of the work, they were aided by other university women.

Gamma. In the main hall of the home economics building there has been placed a glass case, seven feet by four. Across the back is hung a large banner in the fraternity colors. Standing upright in the center is a gilded cardboard representation of our

badge. Open copies of the constitution are also in the case, together with our ribbons.

Gamma chapter believes that this display will make underclass girls more familiar with the standards, aims, and purposes of Omicron Nu.

Beta. According to custom, a tea for the purpose of acquainting home economics freshmen with Omicron Nu was held at the Practice House, the faculty and active members acting as hostesses.

Our work for the year in Beta chapter has been divided into three phases: educational, social, and financial. We are endeavoring to familiarize ourselves with home economics and its many opportunities. At our meetings each member responds to roll call with a current event concerning home economics. In addition, each member is responsible for a report on some particular magazine of interest and importance to home economics.

There is now under discussion a plan for adopting one or more Belgian or French orphan babies. Our finance committee has already purchased a Liberty Bond and War Savings Stamps. Funds have been obtained by a series of sales of popcorn, ice cream, and cocoa.

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EDUCATION FOR THE AMERICANIZATION OF THE FOREIGN FAMILY¹

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I will attempt today no definition of Americanization but instead will state several elements in the process of adjustment, in which for many years I have been interested.

An adequate economic level must first be secured by the efforts of the members of the family group, or by those so related to the members of the group that it may be enjoyed without violation of self-respect or impairment of the spirit of independence.

There must exist also the opportunity to experience and utilize the spiritual and cultural values that lie in the national and family life by cherishing the rich heritage of a long struggle for national independence, and by enjoying the discipline and control or obedience and direction that should be found in the relation of parent and child.

Relations to the new community of which the family has become a part must be so created that there may be reciprocal understanding and respect, that common activities may be developed, and that the common responsibility for the New America that is to play a noble part in the New World Order may be realized.

¹ Abstract of a paper presented at the meeting of the American Home Economics Association in connection with the Division of Superintendence, N. E. A., Chicago, February, 1919.

Clearly, to none of us does Americanization mean persuading families of other national origin to do what Americans have done, or what foreign groups have been encouraged in the past to think not inconsistent with American standards. The practices of the past, we now hope forever dead, have made us blush with shame as we recall them. There has been the brutal lack of hospitality with which we have allowed strangers to enter our gates. We have taken them in, to be sure, and that is better than to have shut them out; but the conditions resulting from our failure to prepare for their arrival fill the reports of our Immigrants' Protective League, of our Immigration Commission, and of other organizations concerned with the care of the distressed and needy in our cities. There has been the inadequate wage; the opportunity for only unskilled gang labor; the crowded home; the assumption, since we enacted our child labor laws, that those mothers whose children were too young to earn would supplement the father's earnings by taking in lodgers, thus overloading the already heavily burdened mother and supplying to the unattached man conditions of living most inadequate to his varied needs and most dangerous to the privacy of the family group. There has been the lack of any adequate provision for the unattended girl whose labor is being coined into goods or transformed into services we enjoy. There has been the assumption that because they were different they were inferior, and there has been a willingness to lose the rich contributions they might make.

Many illustrations of these wastes could be given. One that comes home to me often is the failure to preserve some of the charm and beauty of the names. When Dyonisius and Aestesthaea become Charlie and Nellie, they are more at home as they play in the ugly street in front of the Parthenon barber shop over which their sordid tenement is located; but they are less likely to suggest to us the possibility that they may bring us from that land, from which our great heritage of beauty has come, some echo of the olden art and of the sparkle of sea and sky and noble human form. Casimira and Janina, too, suggest the claims of a race peculiarly gifted and leave us uncomfortable in their poverty and distress, while Cassie and Jennie are common little foreign things that matter little after all.

When I look at the problem of Americanization, it seems to me that it is a problem of groups of persons, none of whom are American in the sense that we and the soil have been long together. *Nous marchons, tous, nec'est-pas?* "We are pilgrims and we are strangers," we cannot

tarry too long. But some have come sooner and some have come later; and all, with the exception of the colored people and the Spanish speaking Americans of the Southwest, have a common memory of having come deliberately, come either from something worse or to something better. None of us "just grewed"—at least this was true not very far back. We have been self-selected out of all the nations of the earth. We have not always been invited, nor can we give ourselves the comfortable assurance that we "were just as welcome as if we had been." We have come for different reasons; we have not those in common; we have come at different seasons; but we have been self-determining to this extent, that we have gone from where we were into a far country.

The world has suffered a catastrophic experience. There has been a sense of peril common to us with all the peoples of the world, we believe. The lines have been drawn between a doctrine of control from without, perhaps by force, and that of development from within, self-determination of the peoples or of the individuals. We have had a violent shaking down into our places; and, as the whirlwind passes, we open our eyes to see where we are, whither we would go, and how we can go together. It is because this is a strategic moment, when what we were all doing before can be scrutinized and the way ahead surveyed alike for us all, that I am interested in the problem.

Americanization of the home means for me, then, the establishment of the good home in the good neighborhood, in the well-ordered city, or in the efficiently organized rural community, under a self-directing state government which will see a new significance in the consent of the governed.

What of the home in this effort at coördination! There are the mother and children; older children, boys and girls of elementary school age, children under school age, and infants; there is the husband and father; and often there are the aged parents, the relatives who have been taken in, and the lodgers.

What is the approach to the task of adjustment? From the nature of the task must be deduced the kind of training needed by those undertaking it. Several approaches to the question are possible. There is, first, the body of information that can be obtained from persons who have been in the situation, who have come through the experience and can formulate views based upon their own experiences and those under their immediate observation. Then there are those who come into immediate contact with the various groups for the purpose of rendering services of one kind

With these and many other evidences of our inadequate preparations for meeting these needs, I drew up the slight bibliography and the brief outline of a course noted in the February Journal for the consideration of the heads of departments in home economics in state universities.

But I should like to put the question, is what we are seeking the Americanization of these groups? Is it not the new-Americanizing of us all?

Take the effect on the careful foreign mother of our lack of protection for young girls and the consequent lowering of standards of manners in public places. The impression made on a Bulgarian young woman by our young women in public places would indicate that we have not considered this. This is a real difficulty with the Italian mother. At the University the Dean of Women can urge that large measure of social freedom with which intellectual freedom alone can be expected; but in the University, on the whole, conditions are safe; everyone knows that the student who mistakes freedom for license will be removed. But the Italian mother has no assurance that the places in which her daughter either works or plays will be kept safe.

And, then, there is the remodelling of the conditions into which these strangers are allowed to come, the question of housing and water supply in the city, of play and school and neighborhood in the small town and in the country. We should have things to say as to the value of the woman's time and strength. To the architect generally her time has so little value that he feels no pressure to put his mind upon the problem of lessening her task. We should consider also the interesting question of the source of supply from which the workers are to be drawn. The question of obtaining persons from the various national groups to prepare for this form of service is one worthy of consideration. The use of the skilled foreign language worker seems to give results far richer than the use of the interpreter or the use of the children and the neighbor.

The Immigrants' Protective League and the Y. W. C. A. have been able in general to obtain foreign-speaking visitors who have become most skilled social workers. But we face, of course, the problem of the wide-spread poverty among these groups. Some agencies have been willing to take workers of a grade lower than would be considered among American visitors; but if we are going to get their best intelligence we must make provision in the way of scholarships for their thorough educational equipment.

THE ACIDITY OF VARIOUS SYRUPS USED IN COOKERY

AMY L. DANIELS AND ESTHER H. HEISIG

From the Department of Home Economics, University of Wisconsin

The use of various sweetening syrups in cookery during the recent sugar shortage has led to an inquiry concerning the amount of sodium bicarbonate (cooking soda) necessary to neutralize the acid contained in them, for in many of the batter and dough mixtures advantage may be taken of the carbon dioxide formed as a result of combining certain of the syrups with soda to decrease or eliminate the baking powder or other leavening agent necessary to lighten the product.

In such mixtures there should not be an excess of soda, for, besides the unpleasant taste, untoward results may follow the use of too much alkali. Recent work concerning the effect of alkali on certain of the vitamins, more particularly the antiscorbutic, has shown that some of these are extremely sensitive to dilute alkalies at cooking temperatures, and, although we do not depend upon such foods as breads, cakes, and puddings for our supply of the food accessories, nevertheless, in certain instances these foods may furnish significant amounts, especially in diets containing little fruits and vegetables. The excess of alkali in corn bread has been suggested by Sullivan and Voegtlin¹ as the explanation of the fact that chickens fed cornbread made of cornmeal, milk, and baking soda developed polyneuritis, while those given cornmeal, milk, and sodium chloride remained in good condition. Investigations by Harden and Zilva² have shown that the potency of the antiscorbutic material in orange juice is greatly lessened by treatment with dilute alkalies. Furthermore, the wisdom of neutralizing the acid of the gastric juice by an excess of alkali in the food may be questioned, especially in cases of hypoacidity, where digestion is delayed and the antiseptic efficiency of the gastric juice greatly lessened.

An examination of recipes in a number of present-day cook books indicates that there is considerable variation in the amount of cooking soda used with a given quantity of molasses, honey, or other syrups. For example, in one very popular cook book directions are given for using one-half to three teaspoonfuls of soda in certain mixtures calling for one cup of molasses when this is the only source of acid. With sour

¹ Sullivan and Voegtlin: *Proceedings Soc. Biol. Chem., Jour. Biol. Chem.*, 24 (1916), p. xvi.

² Harden and Zilva: *The Lancet*, September, 1918.

milk and molasses the amount of soda is necessarily increased, but here also there seems to be no standard proportion, one recipe calling for one and three-fourths teaspoonfuls of soda with one cup of sour milk and one cup of molasses, while another uses the same amount of soda with one-half cup of sour milk and one cup of molasses. Similarly, the amount used with honey in recipes varies, directions calling for one-half to one and one-half teaspoonfuls of soda with one cup of honey. The following inconsistencies were noted in some much used sources.

TABLE 1
Relation of soda to molasses in much used recipes

| PRODUCT | MOLASSES | SOUR MILK | SODA | FLAVORING |
|-----------------------|---------------|---------------|----------------|-----------|
| | <i>cu ps</i> | <i>cu ps</i> | <i>ts p.</i> | |
| Spice cookies..... | 1 | 0 | 1 | Spice |
| Molasses bars..... | $\frac{1}{2}$ | 0 | 1 | Spice |
| Ginger snaps..... | 1 | 0 | $\frac{1}{2}$ | Spice |
| Gingerbread..... | 1 | 0 | $1\frac{1}{2}$ | Spice |
| Gingerbread..... | 1 | 0 | $1\frac{1}{2}$ | Spice |
| Gingerbread..... | 1 | $\frac{1}{2}$ | $1\frac{1}{2}$ | Spice |
| Cake..... | 1 | 1 | $1\frac{1}{2}$ | Spice |
| Molasses cookies..... | 1 | 0 | 3 | Spice |

TABLE 2
Relation of soda to honey in much used recipes

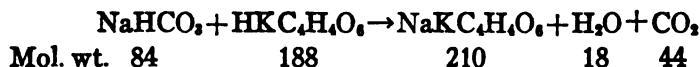
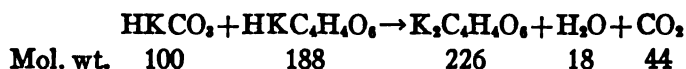
| PRODUCT | HONEY | SOUR MILK | SODA | FLAVORING |
|-------------------|----------------|---------------|--------------------|-----------------|
| | <i>cu ps</i> | <i>cu ps</i> | <i>ts p.</i> | |
| Fruit cake..... | 2 | 0 | 3 | Spice and fruit |
| Drop cookies..... | $\frac{1}{2}$ | 0 | $\frac{1}{2}$ | Spice |
| Cookies..... | 1 | 0 | 1 | Spice |
| Soft cake..... | 1 | $\frac{1}{2}$ | 1 | Spice |
| Nut cake..... | 2 | 0 | $1\frac{1}{2}$ | Spice and fruit |
| Butter cake..... | 1 | 0 | $\frac{1}{2}$ to 1 | Spice and fruit |
| Honey cake..... | $1\frac{1}{2}$ | 0 | $1\frac{1}{2}$ | Spice |

That an excess of soda has been used in many of these recipes is demonstrated by the fact that water extracts of the products give alkaline reactions. In some cases this excess has not been apparent because the spices have quite masked the taste of the soda, while in others we have not learned to discriminate between the taste of soda and that of less familiar substances, for example honey, when these are used in combination.

The different proportions of cooking soda and molasses used in the various recipes may be due to several factors. Many of the recipes have been handed down from preceding generations when the molasses, in all probability, contained larger proportions of acid.

The methods employed in the preparation of molasses were formerly quite different from those in vogue today. After the cane juice had been clarified with milk of lime, it was boiled in open kettles until the sugar began to crystalize, and was then poured into hogsheads having fine perforations in the bottom, which permitted the molasses to separate slowly from the crystals. This gradual filtration caused aeration of the syrup and offered conditions conducive to fermentation and increased acidity. The present method of treating the cane juice, after the addition of lime, is to boil it in large vacuum pans and separate the crystals from the syrup in centrifugal machines. By this means, the possibility of moisture absorption and the subsequent production of acid as the result of bacterial action is practically eliminated.

Not only has the character of the molasses been modified, but the carbonate used in cooking with the molasses has also been changed. Formerly potassium bicarbonate or saleratus was the agent employed to neutralize the acid, whereas today sodium bicarbonate is used almost exclusively. With sodium bicarbonate a larger amount of acid is required to neutralize a given quantity. The following equations, indicating the reactions which take place when potassium bicarbonate and sodium bicarbonate are mixed with cream of tartar in the presence of water, illustrate the point in question.



One hundred parts of potassium bicarbonate are required to neutralize one hundred and eighty-eight parts of cream of tartar, whereas only eighty-four parts of sodium bicarbonate are needed to neutralize the same amount of cream of tartar. Since in the American household it is customary to measure rather than weigh, it is obvious that housekeepers who are substituting one teaspoonful of sodium bicarbonate for one teaspoonful of potassium bicarbonate are using considerably more of the alkaline material. Therefore, if no allow-

ance is made for the difference in the two salts, sodium bicarbonate and potassium bicarbonate, an excess of the former will be present. However, even if the amounts of soda called for in many of the recipes were translated into terms of saleratus, it is probable that an excess of alkali would be present.

The acid reaction of molasses is due to the presence of small amounts of inorganic acids, namely, glycolic, oxalic, malic, succinic, and tannic, which remain after the lime is added in the process of purification of the cane juice.³ The amount of acid is comparatively little, since an excess would result in a smaller yield of sucrose through the hydrolytic action of the acid. It is probable, however, that the acid content of different brands of molasses varies slightly, depending somewhat upon the methods of treatment during the purification processes and subsequent handling.

Chemical analyses of honey show that its acidity is due also to organic acids, both volatile and non-volatile. More than half of the former group consists of formic acid, the remainder being made up of valeric, butyric, caproic, and capric acids.⁴ The non-volatile acids are lactic, malic, succinic, and oxalic, of which lactic forms the larger part. Acetic acid is present only when honey ferments.

In contrast with the more highly flavored products which contain molasses and honey are those in which corn syrup is used. These in general call for baking powder when a leavening agent is desired. But since corn syrup contains an appreciable amount of acid, the possibility of taking advantage of this in various forms of cookery suggests itself.

In order to know how much sodium bicarbonate should be used with given amounts of molasses, honey, or corn syrup, the acidity of a number of samples of each was determined, for, although it was anticipated that there would be some variation in the acid content of the different brands, in the case of molasses, or of kinds from different sources in the case of honey, it was believed that these would be so slight that some general proportions might be formulated which would meet the needs of the housewife. In the investigation three different grades of molasses were tested: (1) an example⁵ of the better grade, of light color and exceedingly mild flavor; (2) one⁶ almost black, with a much stronger

³ Geerlings, H. C. P.: *Cane Sugar and its Manufacture*. Manchester, 1909.

⁴ Root, A. L., and E. R.: *The A.B.C. and X.Y.Z. of Bee Culture*, Ohio, 1917.

⁵ "Lucie" molasses.

⁶ "Brer Rabbit" molasses.

flavor; (3) a representative⁷ of the poorest grade which could be found in the local retail stores. This was much thicker and darker than either of the others and had a strong bitter flavor.

Weighed portions of each were dissolved in boiled distilled water and decolorized by means of animal charcoal, which had been previously boiled with dilute hydrochloric acid to remove the inorganic salts, and subsequently washed with distilled water until all trace of acid had been removed. The charcoal was removed by filtration and washed until the filtrate was no longer acid to litmus. Filtrate and washings were combined, made up to mark, and the acidity of an aliquot portion determined by means of N/10 sodium hydroxide, phenolphthalein being used as the indicator. Duplicate determinations were made in all cases.

The honey and corn syrup were similarly prepared, excepting that in these it was not necessary to use charcoal, since the solutions were almost colorless. Four varieties of strained honey were tested, three purchased from local stores—one in Wisconsin and two in Iowa—and one from the University Apiary. Only one brand of corn syrup was tested since the results on this indicated that the amount of acid was too little to be of material value in cookery processes.

The amount of cooking soda necessary to neutralize the acid in one cup (8 ounces) of each of the syrups was estimated from the per cent of acid in the given sample, the weight of one teaspoonful of soda being taken as 4.4 grams. Since we were aiming to meet the conditions of the housewife, the soda was measured and weighed as it was taken from the box in which it was purchased, no attempt being made to dry it to constant weight or determine its purity, for previous work in this laboratory has shown that there is but little variation in the alkalinity of different brands of soda, and that the amount of deterioration produced by standing under ordinary conditions is so slight as to be negligible. The results of the investigation are given in tables 3 and 4.

It will be noted that there is a slight variation in the acidity of the different brands of molasses tested, the smallest amount, 0.50 per cent being present in the "Brer Rabbit," and the largest amount, 0.64 per cent, in the "Ginger-cake" brand. The "Lucie" which had the mildest flavor contained 0.52 per cent. Obviously, the amount of cooking soda

⁷ "Ginger-cake" molasses.

CHANGES IN FOOD VALUE OF VEGETABLES DUE TO COOKING*

MINNA C. DENTON

(Continued from the April number)

III. PURPOSE OF THIS INVESTIGATION

This work was undertaken with a view to determining how great are the variations in food value resulting from different methods of household manipulation, in any given process of cooking. The process most frequently studied was that of boiling vegetables. The details considered cover such points as those mentioned on page 3 of the introduction.

IV. METHODS

The methods which were used by the writer in cooking these vegetable samples are described in the tables given below. After cooking, the vegetable was ground or mashed or thinly sliced into metal caps or on to glass plates, and dried at 30° to 80°C. in an oven, or warm air blast, or over a water bath. The amounts of vegetable cooked were ordinarily between 50 and 100 grams, or often much more. This amount was necessary in order that the process should have some resemblance to the ordinary household process; also, in order to secure an approach to homogeneity of samples. After drying, the samples were finely ground for burning in the bomb calorimeter. Often they were formed into pellets by hammering against a metal rod in a metal tube. This was done in order to prevent scattering when the first rush of oxygen enters the bomb; usually, however, this precaution was unnecessary.

The control (uncooked vegetable) was always taken from the same lot as were those that were cooked. As individual specimens, even from a given lot, may often vary considerably among each other in water content and consequently in percentage composition, the control was, whenever possible, a part of the same individual vegetable specimen. In cutting the samples used as controls (uncooked), pains was taken to secure strips running lengthwise through every region of bud or root-stock, so that proportionate amounts of cortex, pith, fibro-vascular bundles, parenchyma, or growing region, would be about the same in control as in other samples. Where it was necessary to take transverse

*A reprint of the full text of Miss Denton's thesis, including 14 pages of tabulated results of the experiments, may be obtained from the JOURNAL office for 25 cents.

sections, these were selected alternately from the various regions, so that each sample might contain representatives of every region.

It is not practicable to give calorific values in terms of weight of cooked vegetables, since this weight varies enormously according to the details of manipulation, and varies, indeed, from moment to moment as the steaming vegetable cools and loses water. I have therefore calculated all values for cooked vegetables upon the basis of raw weight. For example, suppose that 100 grams of raw parsnips weigh 95 grams after cooking (at the moment of manipulation), which dry down to 20 grams; and that this dried parsnip shows a caloric value of 4000 (gram-calories) per gram. Then the raw vegetables with a corresponding value should be assigned 20 per cent of 4000 calories, or 800 gram-calories per gram; which is 363 kilo-calories per pound. If the control, or uncooked parsnip, shows a value of 1000 gram-calories per gram of fresh vegetable (or 454 kilo-calories per pound), then it is evident that this parsnip has lost 20 per cent of its caloric value in the cooking process.

Duplicate samples taken from the same vegetable specimen (or from the same lot if of very small size, as peas) should check within 2 or 3 per cent at farthest. A closer check (0.5 per cent) is usual, but not always possible with raw vegetables, because of the lack of homogeneity of the material. When a high salt content (spinach, some beans) interferes with complete combustion in the calorimeter (by the fusing of salts so as to encase carbon particles and protect them from combustion), the difficulty may sometimes be remedied by spreading the dried powdered sample over a piece of filter paper, whose dry weight and caloric value per gram are known, rolling the whole like a cigarette and bestowing it in the capsule for combustion. Subtracting the calories due to the filter paper, one has then left the calories due to the dried vegetable. Usually, however, if the linen thread (instead of the iron wire) be used for igniting, there is no difficulty.

Furthermore, the calorie value of the total cooked sample plus the calorie value of the concentrated cooking water must be approximately equal to the calorie value of an uncooked sample of the same size, as calculated from the control. This check was conducted in a number of instances (though by no means in case of all samples reported) by evaporating the cooking water to a few cc. of sirup, taking it up on a weighed piece of filter paper of known calorific value, drying and burning the whole mass together, or in fractions, as might be necessary. In

those cases where the amount of extract is too great to be concentrated into a volume convenient for such a test, it may be dissolved in a relatively large volume of water (e.g., 100 to 250 cc.), mixed until thoroughly homogeneous, and divided into aliquot portions in any convenient manner. One of these portions is then concentrated, collected, dried, and burned as above. Any suspended particles must be allowed to settle, and then be filtered out of the whole sample before division into aliquots, finally to be dried and burned separately.

Doubtless the question will suggest itself, why should so large a percentage of these determinations have been made with carrots and parsnips? The reasons were that their cheapness (price per pound) and the ease with which they are stored have put them into general use; that they are usually pared and cut before cooking, largely as a matter of convenience to the cook; that their high sugar content makes them sensitive indicators upon which the effect of varying manipulations may be detected.

Total salts were determined by the water-leaching method;²² ignition was in a muffle furnace.

V. DISCUSSIONS AND CONCLUSIONS

1. The vegetables experimented on, when boiled until tender in excess of water which is thrown away, lose from 15 to 60 per cent of their fuel value. It is a very simple matter to demonstrate these losses ocularly, by cooking pared parsnips, pared carrots, some varieties of peapods, cabbage, onions, etc., finely cut or even coarsely cut, in plenty of water, and then concentrating this water, after pouring off, to small bulk, when it takes the form of a molasses.

The losses are, of course, less, proportionately, when there is less soluble matter to lose. Turnips, cabbage, cauliflower, young carrots, asparagus, onions, spinach, peas, string beans, lose less than do parsnips and mature carrots and Brussels sprouts. Apparently carrots have their carbohydrate more largely in soluble form than do parsnips, for their losses are proportionately heavier, under the same treatment, especially in those cases where their calorie values at all approach those of parsnips.

2. The losses in salts in every case except one (one sample of Spinach) parallel the calorie losses, and usually rather closely. They are,

²² Official Methods, Association Official Agricultural Chemists, Bureau of Chemistry, Bulletin 107.

as a rule, slightly greater than the calorie losses. The same thing was true of nitrogen losses, in those cases where such determination was made. It is, however, the more soluble rather than the difficultly soluble or insoluble carbohydrates and salts, which are the measure of available food; therefore the food losses exceed rather than run below the percentage here stated.

3. The "blanching" process as ordinarily used in home canning causes losses of 8 to 15 per cent in samples of peas, asparagus, spinach, Brussels sprouts, string beans; and 27 to 33 per cent in samples of parsnips and carrots, if vegetables are peeled and sliced. These peas were blanched for 6 minutes, the string beans and carrots for 5 minutes. The peas might have received a somewhat shorter blanch (2 to 4 minutes), which would reduce their loss somewhat, but not proportionately to the reduction in time of blanching, since the losses are relatively heavier in the earliest moments of the extraction period. String beans, fresh prime stock, are often blanched even longer ($3\frac{1}{2}$ to 6 minutes or more) under trade conditions.

4. The losses in blanching might be somewhat decreased by the use of a salted water. In case of peas the loss decreases from 15 per cent in distilled water to 8 per cent in a 1.5 per cent salt solution; for string beans, from 15 per cent in distilled water to 13 per cent in 0.25 per cent salt solution; or it may be 10 per cent loss on 20 minutes' boiling in 0.4 per cent salt solution. Stronger solutions could well be used when short cooking is given. Here a slight increase in the strength of salt solution has made more difference in the amount extracted than has a fourfold increase in time. In case of longer boiling "until tender," the decreases in fairly comparable samples are: Parsnips, from 31 per cent in tap water to 23 per cent in 0.7 per cent salt solution; white turnips, from 24 per cent to 2 per cent in 1.5 per cent salt solution.

Boiled in a small amount of salted water, or in water which eventually boils down to a small amount, the losses are still smaller, not more than 18 per cent loss, though they went through a 6 minutes' blanch before this long cooking period of several hours at a temperature very near the boiling point. A sample of peas, in which the salted water was entirely taken up, apparently shows less than 1 per cent loss, though they went through a 4 minutes' salt blanch before cooking.

The difference in extractive power between distilled and tap water (Lake Michigan at Chicago) is evident but not great enough to be of practical significance.

It is evident, then, that a comparison of weights before and after cooking can give no information as to the extent of loss of solids. Yet we sometimes hear the commercial canners using this line of argument, in denying that losses take place in blanching. But the circumstance that young peas may show no increase in weight during blanching, does not prove nor indicate that no loss of salts, sugar, or protein of the pea takes place.

9. It may be readily observed in case of a well-packed jar that the processing method used in home canning of vegetables or fruit submerged in a boiling water bath results in the presence of a minimum amount of juice in the jar. In a sample of cabbage the combined weight of vegetables and brine or juice is less than the original weight of raw vegetable. In one of string beans there is an excess of water, due partly to the fact that there were not enough beans on hand to fill the jar, but also to the different method of canning, that of cooking with pressure steam while the jar is completely sealed, thus preventing any escape of liquid.

This small amount of juice is a very different condition from that which sometimes has obtained in commercially canned goods. While due chiefly to differences in closeness of pack, it is also due to the fact that during the two or three hours of processing in a boiling water bath the contents of the partially sealed jar are continually giving off steam to the water bath, even when the bath completely submerges jar and cover, or to the atmosphere above it, in case submersion is incomplete. The constantly escaping stream of air and steam bubbles, over or under the rubber gasket, can readily be observed during the entire period of processing. When the jar is lifted out of the bath, presumably the operator at once makes the seal tight; and, even though the seal should perhaps not chance to continue absolutely tight during the process of cooling, there is more or less vacuum remaining until the jar is opened, in a successful product which "keeps" well. The smaller amount of water or juice in the jar, then, may have only a moderate or even a relatively low extractive value, in spite of the long boiling period. Furthermore, the flavor of this juice is good, and it can be served with the vegetable, which is often not the case with jars or cans containing a large amount of watery juice in metal containers.

We may conclude, then, that the methods for home canning, as practiced in following the directions issued by extension workers in agriculture and home economics, U. S. Dept. of Agriculture, compare very

favorably with other methods of canning as to the effect upon the nutritive value of the product, *provided pains be taken to reduce losses from the blanching process*. This precaution is particularly important in case of young tender peas, carrots, corn, vegetables of the cabbage and onion families, and any vegetables pared and cut or broken into shreds or short lengths before blanching.

It is clearly of the greatest importance, as has been so often demonstrated, that the juice of vegetables escaping into cooking water should be conserved, and methods of making this juice palatable deserve the cook's attention. If onions must be boiled in excess of water to reduce their flavor, at least this water may be concentrated by boiling until it can furnish a suitable flavor for milk or cream soups, or broths or sauces, for vegetable or meat hash or stew, or loaf or croquettes.

A great deal of trouble has been taken to discover the best method of cooking each cut and kind of meat so as to secure optimum results. It is time that vegetable cookery received a larger share of attention from the average woman. The problems which arise in the cooking of each kind of vegetable should be given attention on their own merits. General directions for the cooking of the different classes as underground tubers and root stocks, or green vegetables, are exceedingly useful, yet further details appropriate to each occasion should not be forgotten. Here is one small illustration concerning a point too often overlooked: when some parts of a vegetable are very much tougher and more resistant than others the two should not as a rule be cooked together until the toughest part is "done," for this is likely to destroy the more delicate flavor of the tender parts. We do not expect to cook the tenderloin strip and the tail piece of a porterhouse steak successfully by the same process; or if this is done, the tougher pieces are finely chopped before cooking, and this reduces the extra time needed. Often the same method of procedure can be used with vegetables. It is a clear waste, in times of high prices, to throw away the leaf petioles of kohlrabi or cauliflower, the central core of young cabbage or parsnips; very likely these have as high a soluble carbohydrate value as does the remainder of the vegetable. If grinding or chopping be substituted for a portion of the cooking process, or if these more resistant parts can be given a separate long slow cooking in fireless cooker or double boiler, the palatability of the combination may be enhanced, and its nutrients conserved.

One word remains to be said, from the standpoint of modern theories of nutrition. Indications are not lacking that we may at last come to

believe that spring "rheumatism" and pallor and skin disturbance; those cases of pyorrhea which are akin to what has sometimes been called scurvy, low resistance to many winter infections, and that common evil, constipation, can conceivably be favorably affected by such an increase in the diet of these vegetable salts, acids (and possibly "vitamines"), as occurs when we change from a winter diet of canned and heavily extracted vegetables to a spring diet of fresh or lightly cooked ones.²⁷ At least it seems worthwhile to take measures to prevent our foods from being depleted of these vegetable extracts which should no more be thrown away than should the drippings of fat and juice which cook out of meat. Yet many a woman, who would be shocked at the idea of throwing away a meat broth, does not hesitate to discard a much more highly nutritious vegetable broth.

Since the above words were written a study has appeared (Jour. Amer. Med. Assn., March 30, 1918) which exactly illustrates the point in view. Dr. Hess, a notable authority on scurvy, rickets, and other phases of pediatrics, considers it likely that the rickets, so commonly occurring among negroes in New York City, may have some relation to the lack of fresh vegetables and fruits in the diet. He finds that these emigrants from the West Indies never have the disease while living where the diet contains large amounts of fresh vegetables and fruits.

SUMMARY

1. Boiled vegetables may lose as low as 15 per cent or as high as 60 per cent of their fuel value, according to the method of manipulation. Those vegetables which are cooked within their own heavy, intact jackets, such as unpeeled Irish potatoes and beets, will of course lose much less even than this minimum. The extent of the loss depends upon the amount of soluble carbohydrate and protein present in the vegetable tissues, as well as upon the manipulation.

2. Losses in salts and nitrogen often, if not always, slightly exceed the fuel or caloric losses.

3. Blanching for 5 or 6 minutes causes losses of 8 to 15 per cent in salts or fuel value. Peeled and sliced vegetables lose twice as much.

4. Salting the water (1.5 per cent solution, or about 1 tablespoon to the quart) decreases the losses in fuel value due to boiling.

²⁷ It is of great interest and pleasure to the first holder of the Ellen H. Richards Fellowship, at the University of Chicago, who writes these lines, to learn that this doctrine was vigorously propagated by that wise and far-seeing woman.

5. Cutting the vegetable crosswise instead of lengthwise, or into small instead of large pieces, increases the losses.

6. Steaming usually cuts the caloric losses down almost to zero; also the salt losses, except in case of leafy tissues, such as cabbage or spinach, which expose a very large amount of surface to the action of the condensing vapor. However, if conditions within the steamer are such that water washes down over the vegetable mass, steaming may cause very large losses. Particularly is this the case with pressure steamers.

7. The two factors most potent in causing variations in cooking losses are varying lengths of time of cooking, and varying amounts of water used in proportion to mass of vegetables to be cooked.

8. Steamed vegetables always lose in weight. Boiled vegetables may gain in weight because their intercellular spaces take up water at the same time that they are losing heavily in mineral salts and soluble carbohydrates and proteins.

9. Home canning often results in a maximum amount of vegetables and a minimum amount of watery juice in the jar, partly because of close packing and partly because liquid is driven off during the period of processing with the seal only partially made. This relatively small amount of juice in the jar is a great advantage from the standpoint of true nutritive economy,—whatever may be its effect upon ease of sterilization of the vegetable mass.

ADDENDUM

The author takes pleasure in acknowledging her indebtedness to Dean Marion Talbot, Head of the Department of Household Administration; to Major A. J. Carlson, and to Dr. A. B. Luckhardt, of the Department of Physiology; and to Dr. F. C. Koch, of the Department of Physiological Chemistry, University of Chicago; for advice, supervision, and many favors in the way of laboratory facilities.

THE BEGINNINGS OF A PENNY PORTION LUNCH

GEORGE B. MASSLICH

Principal, Wells School, Chicago

Running across a street filled with automobiles, trucks, and cars, at recess time, to the dirty little "school store" with its gum and candy of the cheapest grade, or staying in safety within the school grounds to buy of one's fellow pupil's good candy, clean in its manufacture and handling,—this choice was the beginning of the Wells School lunch.

One hundred penny pieces of candy cost the dealer sixty or seventy cents. The pupil's store, with no overhead expenses, began to accumulate a capital which in true coöperative fashion was invested in the business, so that within a few days a further choice was possible. A glass of skim milk with a cookie, served by a pupil with clean hands and wearing a clean white apron, argued with the stick of candy or the four marshmallows. This was, of course, before the war and at pre-war prices; the argument now is between half a glass of skim milk and two marshmallows.

There were no secrets between buyer and seller, for the buyer of today, if he or she were above the third grade, might be the seller of tomorrow. The milk with the cookie sold at cost, but the candy profits paid for the glasses, for the paper napkins, and for the aprons and towels made and hemmed in the home economics classes. Moderate sales of candy sufficed to pay expenses and add to the equipment, so that we felt justified in continuing it as the store prospered and we undertook a noon business with cookies, crackers, fruit, and "home cooked" food. Although the same freedom of choice was allowed as at first, the sales of candy increased only slightly.

As the situation became more and more complex improvements were made, not a few through suggestions by the pupil workers themselves. Aluminum checks good for a penny each were sold in advance and dropped into the box at each section of the counter. This plan served as a test of the accuracy (and honesty) of the cashier, enabled one to count portions for the cost schedule, and made it unnecessary for those who served the food to make change or handle money. A corps of servers and clerks involved a manager, and the use of many dishes made it seem wise, even though other help was voluntary, to pay someone for the drudgery of washing them. An account was opened at the

local bank, and various upper grade pupils took turns counting the day's receipts, making out the deposit slips, and sending the money to the bank.

One of the duties of the manager for the day has been to count the cost of the items in each "dish" and compare the cost and the selling price—the aim being to have neither a profit nor a loss on the whole day's business, exclusive of the candy and cookies which show a fairly constant profit.

A word as to the honesty mentioned above. Once in a long while we have found that several of the servers have helped themselves to a cookie or two. These minor epidemics all seem to have arisen when a pupil, tempted to take something, has sought to justify his act on the ground that he was a helper, and then has communicated his plea to others with him. The sense of partial ownership appeals to all the children involved in the enterprise, and the argument, whether ethical or not, that taking from the lunch room is taking from each other and from themselves and is therefore very bad, has been sufficient to stop the practice.

From the first, a certain amount of supervision and help has been given by the principal or by a teacher. Food has been bought on monthly account and paid for by check, the pupils merely verifying the bills by the delivery slips. After two years of pupil management we asked the Board of Education for three dollars a week to pay for dish washing and for help in cooking. This was granted and the amount was increased later. At the beginning of the fourth year and since that time—during the past year and a half—we have received from the Board, for help, a sum equal to a third or a half of the total receipts. The major part has been used to pay the part time salary of a home economics teacher and the minor part for common labor. Pupils, both boys and girls, continue to assist under the direction of this teacher. The task of helping (considered by the child a privilege) comes to each pupil about once in six weeks, except that to a special group of girls in the fifth grade who are over age it comes somewhat oftener. Food products from the regular cooking class are used at times in the school lunch, and, altogether, the services of the children are more in demand than ever before.

Including the sales of candy, crackers, and cookies, over thirteen hundred penny portions are sold every day. Each sale is for a check costing one cent, and, from a typical menu of cocoa, skim milk, soup,

beef stew, macaroni, baked beans, chocolate pudding, prunes, and sandwiches, one may select a meal of substance and variety for five or six cents. It is amazing that children whose diet at home is devoid of variety and who insist that they do not like this or that—particularly cream soups and vegetables—have, of their own choice, bought and eaten nearly a hundred different dishes at the lunch room. We try to limit the child to one penny portion of each kind; we talk about variety and value of food in a simple way in the class room, and at times we advertise a new food, as, for example, when it was announced that a dish much used by American Indians—succotash—would be served; but the final choice rests with the child himself.

We have, I believe, demonstrated that it is possible, by a combination of store and lunch room, to start without capital; that good candy is the best argument against poor candy; that good food is an argument against all candy; and that interested coöperation is worth more than equipment.

Further development in a number of directions is needed. No limitations of time, space, or money can excuse failure to provide children with facilities for washing their hands and for hanging up their wraps, or time to eat leisurely. The art of eating as a family group, using the accepted table ware and observing approved manners, is not only conducive to health but may become a social asset. The conception of a school lunch as a soup kitchen, pure and simple, ignores the fact that it is part of an educational institution and should not smack of the orphan asylum. Eight or ten children seated at a table with a teacher or an older child and served by one of the group may have a delightful time together without realizing how much they are learning.

As the school lunch is more than a restaurant so the director should be more than a practical cook. The thought underlying calories, proteins, and balanced rations can be brought into the comprehension of young people. Taking inventories, counting costs, planning menus, discussing recipes, directing the work of others—these means of education constitute a powerful argument for putting every school lunch in charge of a home economics teacher, and for unifying, gradually, the lunch and the teaching of home economics; but that is not easy.

The problem of feeding the child who is too poor to buy can be solved when checks are used by having his teacher give them to him secretly. His mates have no idea that he has not paid for them. A more difficult problem is that of inducing those who most need the lunch to patronize

it. Upper grade pupils as a rule have several times as many pennies to spend as have children in the primary grades, and naturally buy with more judgment. Many children do not have even a penny, and others, because they are shy, or for some other reason, do not come near the lunch room. A good plan with the smaller children is to lead the whole class during school time into the lunch room, provide each one with a "free check", and have them go through the regular routine of getting a cup of cocoa. After all are seated a short period of story telling on the part of the teacher will be enough to disguise the purpose of the visit.

We have been careful never to give the impression that the lunch is a charity affair for poor children. We supply the day nursery, which is a department of the school, with food; and nearly every teacher regularly supplements her package lunch with soup and other hot dishes, simply because the quality is good. We are conscious of our limitations and of our failures; but we find a grain of comfort when the pupil helpers ask if they may not take some soup to a sick neighbor, or when a boy of twelve, left to cook for his father and little brothers and sisters while his mother is in the hospital, asks the teacher what he might safely attempt to cook at home, or when a couple of girls after school go into a home where the mother is ill, wash and dress the little children, get supper, and straighten up the house. There is a human side even to the school lunch.

ANNEXING MULBERRY BEND TO THE U. S. A.

It is in that part of the city, of which Jacob Riis often spoke and wrote, that the Educational Nursing Bureau of the Association for Improving the Condition of the Poor decided to attempt some public health work. Prenatal nurses began the work by a house-to-house canvass for the purpose of giving to expectant mothers such instruction as should insure a normal, healthy baby, and a well, strong mother.

The question is often asked, "How do you gain access to the home? Do you find a ready welcome? Are the mothers responsive?"

When we remember that 95 per cent of these mothers are foreign born, and speak practically no English; that prenatal nursing is a recent branch of public health nursing; that the medical care is given entirely by midwives, who assure the mothers that the nurse is not necessary—we are not surprised on our first visit to find a doubtful, wondering mother.

During the interval between visits the mother tells a neighbor of our visit. Perhaps this mother has just returned from convalescing at our Caroline Rest, or her baby, who had a disfiguring hare-lip, is now as pretty as any baby in the block. So she establishes for us our future good relations with our patient.

Along with the nurse has worked the dietitian in any family where the poor condition of the children has seemed to be due to improper feeding. Malnutrition clinics were organized for the under-nourished children of these homes. The first clinic was started at a Board of Health Milk Station. Later it was transferred to a school building. Three other clinics have been opened, two in schools and one in a diet kitchen. There are enrolled today at these four clinics 381 children, of whom 220 (57 per cent) are underweight. In all, 51 clinics have been held, and 652 home visits have been made by the dietitians.

The main idea running through the clinic and home work has been to get a plan which would give both the mother, with the folks in the home, and the school child the same opportunity to learn together some lessons in better living, with especial emphasis on the food question. To teach the mother alone is not enough, because, if you get the mother to cook the food as instructed, very often the children refuse to eat it because it does not mean anything to them. Again, it is not enough to interest the child without in some way bringing in the mother; a too frequent result of that is to arouse an antagonism between the child and his mother. So we have tried to run the two lines of instruction as nearly parallel as possible. For example: the weight chart with the child's name on it so that everyone knows whose chart it is, the colored stars as rewards for the establishment of better food habits, give the child a feeling that he has a certain responsibility in the matter, and also urge him on by creating the spirit of competition between him and the other children. On the other hand, the frequent visits to the home tend to give the mother the idea that you are interested in her personally, and that if her child is to do as well as the child next door she must contribute her part by giving the child the opportunity of having the things which will improve him.

We hear so much to-day as to the need of Americanization of our foreign folks. Is there any better promise of Americanization than in the daily, patient teaching of these mothers and children in the essentials of clean, healthy living? At least it is along this line that we believe we can best do our part in Americanization work.—*Bagdad on the Subway*, A. I. C. P.

FOR THE HOMEMAKER

THE CAVE OF PRECIOUS THINGS

A SHORT PLAY FOR CHILDREN

ALICE WANGENHEIM

ADAPTED BY K. W. HINKS

Characters:

Jane.
Bobbie.
Ellen, their nurse.
Captain of the Forty Ex-Thieves.
A Little Belgian Girl.
A Soldier Boy.
A Sailor Boy.
A Little Rich Boy.
Members of the Band of Ex-Thieves.

Scene: Jane and Bobbie's nursery; five in the afternoon. The setting is simple: a shallow stage with no break in the background except a tall cabinet covered with rose-colored curtains, in the center; and a low table across which Jane and Bobbie in low chairs sit facing each other. Jane is reading from a big book.

Jane (Reading slowly and somewhat laboriously): "Then the Queen of the Sea made a great fire under the golden bowl, and in it she threw perfumes and aloes wood and stirred it; whereat a great steam and bubbling uprose, and there came forth a huge Djinn whose head reached the vaulted roof——"

Bobbie (As Ellen appears in the doorway with a tea-tray): Hoor-ray! Tea-time.

Jane (Paying no attention, as Ellen sets down the tray and then stands listening, arms akimbo): "'What is it thou wouldst know, damsel?' quoth he——"

Ellen: "What is it thou wouldst know" indeed! It would be that much better to my way of thinking, Miss Jane, if you'd leave reading

about people as don't talk like anybody ever heard, and eat your bread and butter!

Jane (Hurt): It's the Arabian Nights, Ellen!

Ellen goes out. The children start eating, Bobbie leaving the crusts of bread. Bobbie pulls a dollar bill out of his pocket.

Bobbie (Calling): Ellen! (*Ellen re-enters.*)

Bobbie (Waving the bill): Look what Uncle Tom gave me! I'm going to the movies tonight.

Jane: And I'm going too.

Ellen: Now, Master Bobbie, you're not to go to the show tonight, you went last night. You know that you should save your money. And see those crusts of bread you have left. You won't have anything to eat at all if you keep on this way.

Jane (Alarmed): Ellen—are we—are we poor?

Ellen: Bless you, no—but the Government asks you to save.

Bobbie: I don't care, I'm going to the movie tonight.

Jane (Eating only the frosting off her cake): And we're going to get ice cream and candy afterwards, too. You can't make us save. You stingy old thing.

Bobbie: I guess I can spend my money if I want to (*puts four spoonfuls of sugar into his chocolate, tastes it, makes a face, and pushes the cup back*).

Ellen leaves the room. The children sullenly continue with their meal, kicking their shoes against the chair and marring the furniture.

Jane (Messing her chocolate around in an aimless manner): The mean, stingy old thing.

Bobbie (Watching her listlessly): Why don't you be the Queen of the Sea and make a spell.

Jane (At once becoming interested): How?

Bobbie: Here, give me the big spoon to stir with. We might as well have some fun.

The light in the room suddenly grows dim. Voices in a sort of sing song are heard outside. The rose-colored curtains slide back to reveal a high, massive door behind them.

Bobbie: Why look at the curtains!

Jane: And the door!

Bobbie: It's where our play-cabinet was!

They leave the table and, hand in hand, stand before the door. Sing song voices come from behind it.

Bobbie: What can it be?

Jane: Maybe it's the door to the cave of the Forty Thieves!

Bobbie: Do you suppose it will open?

Jane: Let's try!

Both: Open, Sesame!

The door slowly opens wide, revealing the full depth of the stage within. At the same time the sides (which formed the old back) are drawn into the wings, leaving not even the little table as trace of the first part. The stage, which has become somewhat dark in the last few minutes is flooded with light, revealing the scene first observed through the open door.

It is a great cavern, against whose dark walls can be seen barrels of flour, sacks of grain, bags of sugar, and piles of gold and silver money. There are several large record books on a chest at one side. Fifteen or twenty little men in Oriental garb, very brilliant as to sashes, bloomers, and head-pieces, are engaged in hauling some heavy chests into the cave from another entrance (left). Others are moving bags and barrels out of the cave. A number of them are pulling rhythmically on the ropes in the manner of sailors, while chanting a sort of "heave-ho" at regular intervals—the noise which has been heard before:

They do not notice Jane and Bobbie, who stand hand in hand, looking at them.

Bobbie: Please, sirs—who are you?

The little men stop their occupations and stare in a surprised but friendly manner at the two children.

The Captain: What have we here? How did you get in?

Jane: We just came. Are you the Forty Thieves?

Capt.: We are the reformed Forty Thieves—and quite reformed too! You see we weren't *really* killed by the oil—they put that in to make a good ending. Now we are the Collectors and Keepers of the Savings. Meet my men, won't you? Come out, my jolly men. *(To the children:)* You are Bobbie and Jane, aren't you?

Jane: How'd you know?

Captain: Oh, I'm getting to know people pretty well these days. Yes, and I know more about you.

Bobbie (Surprised): What—?

Captain: I don't wonder that you're surprised. You see all those black books over there. We keep a record of everybody in them. So we know what is happening. That's our business.

Bobbie: But—but what kind of a record?

Jane: Yes, what kind of a record? May we see ours?

Two little men have brought one of the big books to the Captain. He thumbs through several pages.

Captain (Reading): Bobbie Davis. Expense record for the first week in May. Food wasted at the table, value one dollar; lost sweater, two dollars; torn coat, one dollar and a half; picture shows, 50 cents; ice cream, 60 cents; candy, 30 cents; Saving Stamps—what? Nothing.

Jane: Oh, Captain, please don't read mine.

The Captain closes the book.

Bobbie (Thoughtfully): Why do you keep that record?

The Captain sits on one of the chests with the children at his feet. In the back ground the Ex-Thieves go on hauling chests, bags, and barrels in and out while they continue their chant in a low tone.

Captain: I'll tell you why. Children who are wasteful and don't save these days should have things explained to them. Should I begin at the beginning?

Bobbie: Yes.

Jane: At the very beginning.

Captain: Well, before there was a war, there was enough for everybody in most countries. People ate what they liked and wore what they chose because there was lots for everybody else. Then came the war. The farmers in the countries at war, who had been raising the grains and other things, all went off to fight—but everybody had to eat just the same. The war spread and spread and pretty soon fields and orchards were turned into battle fields and even when they weren't, it grew harder and harder to raise enough food, or to send it from one place to another. So pretty soon there wasn't enough bread for those the soldiers had left behind, or sugar for the people's porridge, or milk for the babies, or clothing enough for anybody. Pretty soon people in this country began to see that there was not enough to go around, so almost everybody was as careful as could be of everything, and sent away all that could be carried. Then our soldiers went away to war, and we had to send things to them too.

Now the war is over, Uncle Sam must still take care of his men and pay the bills and for a little while help other countries too. But how can we do this if the men and women, and boys and girls use up all their money for themselves, and buy things they do not need, and forget to be careful of the food and clothes they have? The President and the Chief Grown-ups are showing all the children how they can really help Uncle Sam.

An Ex-Thief (In a mysterious voice, tapping the Captain on the arm):
There's a messenger outside, asking for some things.

Captain: Bring him in.

A soldier enters and salutes.

Soldier: Sir, the Army in France must have supplies for the Commissary.

Captain: All ready for you. I think the people know how badly you need them.

Exit soldier with little men carrying barrels and bags.

Ex-Thief (To the Captain): Another messenger, your Captainship!

Enter a sailor who salutes.

Sailor: Sir, the Navy needs money for the men on her ships.

Captain: She shall have it. It is ready. (Pointing to a chest.)

Exit sailor boy. The Ex-Thieves haul out chests as before.

Bobbie: My! I like him. I'd give him anything.

A plump little boy in a Little Lord Fauntleroy suit enters.

Little Boy (To Captain): Are you the Collector and Keeper of the Savings?

Captain: That's my name. And who may you be?

Boy (Drawing himself up): I'm the richest boy in our part of town; I get everything I want. I'm going to take my savings and spend them.

He goes over to the money and starts counting it out.

Bobbie and Jane: Oh, don't let him do it.

Captain (Sorrowfully turning to an Ex-Thief): Any more outside?

Ex-Thief: One more, Captain.

A very thin, forlorn looking Belgian Girl enters and goes up to the Captain.

The Girl: Please sir, will you help my daddy rebuild our home?

Captain: I'm sorry little girl, but I can't unless the American boys and girls save (pointing to the Rich Boy who goes out counting his money).
The little girl begins to cry.

Jane: Poor little thing.

Bobbie: I'm going to help her.

Jane (to the little girl): We are Jane and Bobbie, and we are so sorry we forgot about you, and didn't save our money. We'll go right home and try to find the things you need, and we'll be careful of our clothes and food and everything else, so the money it would take to buy more can be sent to you instead.

Exit little girl, happy.

Captain: No more messengers. Time to shut up the Cave for the night. (To the children) And before you go, would you like a suit of

armor or a pet tiger to take home? Or is there anything else you'd like?

Both children: No indeed—we have everything we need.

Captain: Remember that, and you won't go wrong! Good-bye! Shall we open the door for you?

Several of the Ex-Thieves, in a low, sepulchral voice, call: "Open Sesame." The stage grows dark. When it is light again, the scene is as it was at the beginning of the play. The Children are sitting once more, now in semi-darkness, at the little table.

Ellen enters with a light.

Ellen: Bless the children! Have you gone to sleep in the dark? Wake up! It's most supper time.

Jane: Supper time? Why—but we've been away.

Ellen: Away is it, this time? I thought it was the "Arabian Nights."

Bobbie: To the cave of the Forty Ex-Thieves—only they are Collectors and Keepers of the Savings now. Oh, it was just splendid! And we are going to save now!

Jane: Oh, Ellen, we must help that little Belgian girl.

Bobbie: And the soldiers and sailors, too!

The children run out. Ellen looks after them in astonishment, hands upraised.

Ellen (Puzzled): What's got into the lambs?

THE SWISS WASH KITCHEN

ELLEN HOWARD WILSON

The wash kitchen in Zurich belongs, not to the separate apartment, but to the apartment house. Practically all the people in this city live in apartments which they call *wohnungs*. These dwellings are very complete, often containing a large central hall. An ordinary house will contain three or four dwellings, one occupying each floor.

The cellar of the Zurich house is divided into a number of small rooms, with one large room, the wash kitchen, furnished with a stove and either with or without stationary tubs and ironing tables. Each dwelling

has its own coal cellar, provided with lock and key; it may also have a room for vegetables.

The wash-room is the general property of the apartments and its use is shared in different ways. One plan is for each apartment to have the use of the room for a week in turn. Let us suppose that Mrs. Doctor lives on the first floor; then, if there are four apartments, Mrs. Doctor will have the wash kitchen the first week of the month. She hires a washwoman, preferably a widow, and she or her maid must be up betimes to arrange for the woman when the important day arrives. The coal cellar belonging to the first floor is unlocked, displaying its wealth of coal and wood. The kindling wood is in tiny bundles, each stick being about eight inches long by less than an inch thick. Because it is carefully prepared it will kindle a fire better than two or three times its bulk carelessly cut. The washerwoman, after she has started her fire, takes her first breakfast of coffee, sausage, and bread, eating either in the sunny kitchen on the first floor or down in the wash kitchen.

Breakfast dispatched, she goes to work. She has before her the larger pieces of linen and all the washable clothing used by the family during the month except such few small pieces as Mrs. Doctor and her maid have attended to themselves. If Mrs. Doctor is economical, and that goes without saying if she is Swiss, small articles like handkerchiefs and collars will have been laundered each week. Foreigners and very wealthy Zurichers may send some things to the nearby laundry.

The strong-armed woman will wash everything in a day or a day and a half; but then comes the drying. If the sun withholds its rays, as he very generally does when the summer is over, the roof drying-room is of no avail, and the drying must be done in the two kitchens. It is for this reason that our lady needs her wash kitchen for the week, although the work may be over, sometimes, in three days.

The Swiss family saves fuel by the use of the wash kitchen, as well as in the heating of apartments, and in the use of bakers' ovens. If Mrs. Doctor had had her own laundry, and had employed a laundress each week, she would have used two or three times as much fuel, to say nothing of wages.

It is not a bad arrangement, once you are used to it, but woe be to the housekeeper who forgets to have ready the supply of kindling, or the beer and cheese for the laundress's second breakfast. If she forgets these, she must hurry to the Consum Verein, and her maid must bring back the heavy articles.

THE CHATFIELD LAUNDRY—AFTER SIX YEARS

MARY L. BULL

State Home Economics Extension Worker, Minnesota

The Chatfield coöperative laundry in the first year or two of its existence was watched with great interest, doubtful ones being sure that it could not be a success. Six years of successful operation have proved that such a laundry is not only possible, but that, if not an absolute necessity to the community, it is one of the helps which will make for the much needed conservation of woman power.

The real beginning of the laundry was at a meeting of the County Life Commission held at the University Farm, St. Paul, Minn., December 11, 1908, when the possibility and practicability of organizing coöperative laundries in connection with already established coöperative creameries was discussed. The idea originated in the mind of Mr. Clarence Wedge of Albert Lea, then editor of the Orchard and Garden Department of *The Farmer*, and it later received considerable notice through the press.

Some farmers of Chatfield, Fillmore County, became interested in the project and brought it before two well established organizations, the Farmers Club and the Coöperative Creamery Association, where it was discussed and brought to the notice of the town as well as the rural communities. In 1912, the coöperative laundry of Chatfield was organized—the first in the state as well as the first of its kind in the United States. The coöperative creamery which made such a laundry possible had been established in 1889 and was such a success that the stockholders had realized in dividends \$2.70 on every \$1.00 invested at the time of organization. At an annual meeting of the stockholders it was decided to pass their dividends and allow them to accumulate. In 1912, when ways and means of starting a laundry were discussed, the accumulated dividends amounted to \$2,000. This sum they voted to use in building an addition to the creamery building which could be rented to the laundry corporation.

The laundry corporation was made a separate corporation because many town people, who were not stockholders in the creamery, were interested and became stockholders in the laundry. The object of the laundry enterprise was to be of service to the patrons, not to realize a profit on investment. Shares were sold at \$5.00, and stockholders invested from five to twenty-five dollars. A stockholder has one vote

whether he holds one or more shares. In 1914, there were 224 stockholders. The officers of the laundry association were the same as those of the creamery association and this policy still continues.

The laundry room is 30 x 70 feet, and has windows on both sides and one end. The original equipment consisted of two 36 x 62 No. 11 plain three-apartment wood washers; one 32 x 30 No. 2 plain wood washer; one 100-inch 5 roll ironer, ribbon feed, automatic stop, belt driver; one 26-inch S. C. extractor; one 60 gallon iron soaptank; one 25 gallon H. R. starch cooker; one one-section dry room; three plain all metal trucks; three vertical steam coils and fan; one 11, 8 x 18 combined ironer, tilt boards, shirt board with clamps; one collar board; one Litchfield gas burner; one No. 5 shoe band ironer; one hot tube shaper; one barrel frame starcher; one No. 24 shaw collar shaper; and one gas machine. This equipment is sufficient to turn out \$400 worth of work per week. One form ironer has been added to the equipment, since the man in charge at present felt that too much time was being spent in ironing the bodies of shirts by hand, and that the body ironer would be an economical investment.

There are employed in the laundry one superintendent, one forewoman, five or six girls, and a delivery man.

At first a rate of five cents per pound was charged for rough dried family work that came from the county. Town work had ten per cent added to cover collection and delivery. At present the rate is six cents a pound for rough dried family work from the county and ten per cent added for town work.

Country work is brought to and taken from the laundry on days when cream is brought to the creamery. If brought on Monday it may be taken away on Wednesday, if brought on Tuesday, it is ready on Thursday. In the rough dry family wash all flat work—sheets, pillow slips, bed spreads, towels, table linen, handkerchiefs, and plain curtains not requiring stretching—is put through the mangle. For unstarched articles requiring hand ironing an extra charge of from two to six cents a piece is charged. Starched articles come on a separate list. These prices are necessarily irregular because of the size, style, and trimming.

One engine furnishes the heat and power for both the creamery and the laundry, the work of attending to the firing being divided between the laundry and the creamery man.

A recent survey of Chatfield Laundry activities shows that the average number of patrons for 1918 (to October 1) was 204, of which 38½ per

cent is from the country, 39 per cent from town, and $22\frac{1}{2}$ per cent from adjoining towns. The amount of business done in 1916 was \$6556.98, an average per month of \$546.41; in 1917 it was \$6750.85, an average per month of \$562.57; in the nine months of 1918, the average per month was \$573.46, showing a slight increase from year to year.

In 1917, the balance sheets show that $66\frac{1}{2}$ per cent of the year's expenses were paid out for help and $29\frac{1}{2}$ per cent for other things, as rent, power, soap, starch, gasoline, twine, paper, and repairs, leaving a reserve fund of 4 per cent or \$277.74. It is interesting to note that the number of patrons is practically the same summer and winter, that during the winter the greater proportion comes from the town and in the summer the proportion is greater from the farm.

The survey however did not show any perceptible increase in rural patronage since the war. We believe that, if women are doing outside work as they are in so many places, some of the laborious work of the house should be taken from their shoulders. In a house to house canvass most house wives who were patrons of the laundry expressed the opinion that it was a most helpful institution and that they felt that sending laundry out was in their case an economical proposition. A few felt that laundries in general were hard on clothing, but others who had patronized the Chatfield Laundry since it was established said that they did not find it true in this one.

One little woman, old at 35, said with great pride, that she did all her work, washing, ironing, caring for the house in general, and sewing, as well as helping with the milking or doing it alone, and in busy times helping with the field work. When asked if she did not think it wise to save her strength and have some time to enjoy life, her remark was that she could not afford it. Later investigation showed that the family were well-to-do farmers.

One great factor which is needed in an enterprise of this kind is perfect coöperation. Chatfield seems to have found the keynote. Two women, when asked which they would prefer, a home laundry, fully equipped with power washer, wringer, machine ironer, and hot and cold water, or a good coöperative laundry, replied, without a moment's hesitation, the coöperative laundry.

A laundry, coöperative or otherwise, must have someone in charge who understands the business and who believes it to be a business worthy of his best efforts. Again Chatfield seems to have secured the right person for the Superintendent of the Coöperative Laundry.

EDITORIAL

Belgian Society for the Education of the Family. The following letter, received by Dr. Langworthy, may be a suggestion toward international coöperation in home economics.

The writer, M. Paul de Vuyst, an honorary member of the American Home Economics Association, and Chief Director of Agriculture in Belgium, has held for years a high reputation as a teacher of agriculture and an authority on agricultural education and agricultural employment. He was influential in establishing the Domestic Agricultural Schools of Belgium, that give not only technical instruction but also the fundamentals of a general education, some also having courses on common law and on social economy.

Partly as a development from these schools have come the special courses of lectures for farmers' wives, dealing with hygiene, sanitation, and the education of children, as well as the organization known as the Union of Farmers' Wives in Belgium. M. de Vuyst has published various articles and books on social and economic subjects and practical agriculture. One of the best known is his book on Woman's Place in Rural Economy. (*Le rôle social de la Fermière*. Blackie & Son, London.)

Brussels, Dec. 15, 1918.
22 Avenue de l'Yser.

Dear Sir:

Please excuse me for writing you in French. On account of the German occupation we have read no English publications for four and a half years. At last we are delivered from this oppression. What gratitude we owe America for having preserved us from hunger and for having assisted in bringing about the triumph of justice! New bonds of sympathy between both countries will result.

Please let us hear from you, and when you are ready to visit Europe we shall be most happy to receive you.

My son has fought valiantly and has been wounded several times. We have not yet seen him as he is still in the hospital but he will return to us soon. Our daughters have grown. They have continued their studies and soon they will go to one of the allied countries to study the language and institutions.

One now thinks of the reconstruction, economic, industrial, and financial, of the countries so sorely tried. This is urgent but there is a matter of still greater importance.

Enclosed is a little pamphlet which I have published under the pseudonym, "A. Leconsier." You will find therein some reasonable ideas, a summary of which you might publish in the American papers.

Our League for the Education of the Family has decided to establish an Institute for the Education of the Family as a memorial to lasting peace and as the beginning of a new era of great world progress. This Institute will devote itself to the study and the popularization of the best methods of education in the family, and to the publication of documents.

We speak particularly of the moral education,—the education of character. America, like Belgium, places high moral education above all other progress. We feel therefore that if, through the press, you could focus public attention upon the importance of creating a similar Institute, generous contributions would be forthcoming, for there has always been generous support for a multitude of institutions for advancing the various sciences, arts, and industries; so it seems only logical that we should find support for the advancement of the most beautiful, the most important of arts,—the art by which parents may improve future generations.

In attaching too much importance to the economic interests, certain opposition may arise against us, since the effort to attain the highest degree of moral perfection necessarily uses pacific methods.

Our League for the Education of the Family has been established for twenty years. It has been the imitator of the Great International Congress for the Education of the Family of which the President of the permanent Commission is H. R. H., the Duchess of Verdun, sister to the King of Belgium.

The fourth Congress should have convened in September, 1914, under Mr. Wilson, the illustrious president of your noble country. This congress was postponed because of the war, but we trust it will be called in a year or two.

While waiting, we hope, thanks to American generosity, that the Institute completed may be realized. I venture to hope that you will make the necessary propaganda.

Accept, dear sir, the assurance of my repeated good wishes.

PAUL DE VUYST,
Directeur general au Ministère de l'Agriculture.

THE QUESTION BOX

Question: What change in flour does bleaching make? Does it change the quality or wholesomeness of the flour? Does any law exist in regard to it?

Answer: Flour bleached by nitrogen peroxide is an adulteration product according to the decision of the Secretary of Agriculture and the Board of Food and Drug Inspection, following the public hearing held November 18-23, 1908. "The character of the adulteration is such that no statement upon the label will bring bleached flour within the law (Food and Drug Act of June 30, 1906)."—Westervelt's Pure Food and Drug Laws, 1912, p. 100.

The nitrogen peroxide which has been extensively used in bleaching flour destroys almost immediately the yellow color which is associated with the fat. It also forms with the moisture of the flour nitrous and nitric acid. Bleaching, furthermore, diminishes the iodine number of the fat and affects the quality of the gluten. Studies dealing with the digestibility of the constituents of wheat flour which has been bleached by nitrogen peroxide have given contradictory results. Artificial digestion experiments with gluten from bleached and unbleached flour indicate that the bleached product digested in less time than the unbleached. But according to one investigator the yeast bread from bleached flour did not differ in digestibility from bread made with unbleached flour. The nitrite reacting material apparently disappeared before the bread was removed from the oven. Another investigator reports that, although the difference in digestibility of bread from the two flours, bleached and unbleached, was less marked than in the case of the flours, yet similar variations were observed. Rats and guinea pigs, fed bleached flour, over long periods, in addition to a general diet, apparently grew normally. On the other hand, alcoholic and aqueous extracts from the bleached flour caused death in rabbits in a few hours, the extract from the over-bleached flour being even more drastic in action.

Ladd, E. F. and Bassett, H. P.: Bleaching of Flour. *Jour. Biol. Chem.*, 6 (1909), p. 75.

Rockwood, E. W.: The Effects of Bleaching upon the Digestibility of Flour. *Jour. Biol. Chem.*, 8 (1910), p. 327.

Ladd, E. F., and White, H. L.: Effect of Bleached Flour Extracts on Rabbits. *North Dakota Station Special Bulletin 9*.

Wesener, J. A., and Teller, G. L.: Flour Bleaching, its Relation to Bread Production and Nutrition. *Jour. Indus. and Engin. Chem.*, 1 (1909), p. 700.

Leach, A. E.: Food Inspection and Analysis, New York, 1913.

Question: Is there any truth in the popular belief regarding the "poison" in orange peeling? If so, to what is this due? Have the peelings any food value?

Answer: Persons who are much exposed to inhalations of the oil of bitter oranges are apt to be affected with cutaneous eruptions and various nervous disorders, headaches, gastralgia, want of sleep and even muscular spasms. Violent colic, convulsions, and even death have been caused in children by eating large quantities of the rind. The toxic principle is apparently the glucoside hesperidin, $C_{22}H_{30}O_{12}$. The orange rind has very little food value. It is used principally for its essential oil and color in the preparation of extracts, and for the pectin which it contains. Recent investigations by Hess and Unger have shown that the rind has anti-scorbutic properties. Watery decoctions of orange peel were found to be effective in curing scurvy in guinea pigs.

The Dispensatory of the United States of America, 20th ed., p. 211.

Hess, A. F., and Unger, L. J.: *Proc. Soc. Exp. Biol. and Med.*, 15 (1918), p. 141.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT
OF CONGRESS OF AUGUST 24, 1912

Of THE JOURNAL OF HOME ECONOMICS published monthly at Baltimore, Maryland, for April
1, 1919.

State of Maryland }
City of Baltimore } ss.

Before me, a notary public in and for the State and City aforesaid, personally appeared Keturah E. Baldwin, who, having been duly sworn according to law, deposes and says that she is the Business Editor of the JOURNAL OF HOME ECONOMICS and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher: American Home Economics Association, Baltimore, Maryland.

Editor: Mrs. Alice P. Norton, Baltimore, Maryland.

Business Editor: Keturah E. Baldwin, Baltimore, Maryland.

Business Managers: None.

2. That the owners are: American Home Economics Association, 1211 Cathedral St., Baltimore, Md.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.]

KETURAH E. BALDWIN,
Business Editor.

Sworn to and subscribed before me this 31st day of March, 1919.

[SEAL]

EDW. W. BAKER,
(My commission expires May, 1919.)

BOOKS AND LITERATURE

Housewifery. By L. RAY BALDERSTON. Philadelphia: J. B. Lippincott Company, 1919, pp. 353. \$2.00. By mail of the Journal, \$2.15.

In this volume of Lippincott's Home Manual Series entitled *Housewifery*, Miss Balderston has gathered together and organized a great deal of valuable material on housewifery which she defines in the opening paragraph "as the business of the mistress of the family."

The first chapter of the book has many good general suggestions on the organization of the house and household, stressing especially the need and importance of good planning.

The chapters on Plumbing, Heating, and Lighting cover, very fully for a short treatise, the care of refuse, heating and cooking apparatus, fuels, and illuminants.

The last chapter on Suggestions for Teachers will prove extremely valuable to everyone who is presenting a course in housewifery, no matter to what type of people or under what conditions. It is full of suggestions for all who deal with the subject—whether as a part of some other course or as a course by itself.

The rest of the book deals with the standards of choice for household furnishings, supplies, and equipment, and gives specific and clear directions for the care of the house and its furnishings.

This volume, like the rest of this series, has an excellent bibliography after each chapter. It is freely and well illustrated.

It is adapted for use as a textbook for college and normal students, and for special classes of older students. It will be an excellent reference book for other groups of home economics students and will be of great help in answering many of the questions which confront every housekeeper.

SARAH J. MACLEOD,
Pratt Institute.

Economy in Food. By MABEL THACHER WELLMAN. Boston: Little, Brown and Company, 1918, pp. 36. \$0.30. By mail of the Journal, \$0.35.

This little book of Miss Wellman's, though written during the war time, was so wisely conceived that it is as valuable now as then. Nearly all the suggestions are as practical today as before the war closed. It contains suggestions on economy in buying, economy in storing food, economy in serving, economy in planning meals, economy in recipes, economy in fuels. There are a few pages of typical recipes.

The most valuable part of the book, however, is the table of comparative costs of 100-calorie portions. By an ingenious scheme, the table is made of permanent value. The cost for the 100-calorie portions is calculated on the prices of 1916 and 1917, but a factor is given that, multiplied by any price, will give the cost of 100 calories of the food purchased at that price. For example, the factor for bread is 0.085, and the cost of a 100 calorie portion of white bread at five cents a pound is given as \$0.0043, or 0.085×0.05 . If the price is eight cents a pound, multiplying the factor 0.085 by 0.08 will give 0.0068, the cost of the 100-calorie portion of bread when the price is eight cents.

ALICE P. NORTON.

The Life of Ellen H. Richards. By CAROLINE L. HUNT. Boston: Whitcomb and Barrows, 1918, pp. 330. Conservation Edition. \$1.25. By mail of the Journal, \$1.35.

Many of us have read over and over again the satisfying life of the woman to whom for so long we looked for inspiration and help. We have asked our students to read it and have put it into the hands of young people as a record of a remarkable life, whose value and effectiveness was set out in a remarkable

way by Miss Hunt. We welcome this new edition, now that the first edition is exhausted, and are grateful to the publishers for offering it for so low a price. We have been reminded again and again of Mrs. Richards during the days of the war and during these times when home economics has been able to aid in the solution of so many problems. We have been sure that she would rejoice in the opportunities offered. We have wished for her wise advice to help us make the most of such opportunities. As we read again this record of her work, we are impressed anew by her almost prophetic vision, and by the many ways in which she was ahead of her times. "We are trying to save the resources of our country by showing how cheap food may be good food," was written, not in 1918, but by Mrs. Richards in 1885.

This new edition of her life should have an even larger circulation than did the former.

ALICE P. NORTON.

Food Saving and Food Sharing. By EVA MARCH TAPPAN and Others. New York: Doubleday, Page and Company, 1918, pp. 102. \$0.24. By mail of the Journal, \$0.30.

This little book was written under the direction of the United States Food Administration in cooperation with the Department of Agriculture. Miss Tappan was assisted by Mrs. Norton, editor of the *JOURNAL OF HOME ECONOMICS*; Henrietta W. Calvin, Specialist in Home Economics, Bureau of Education; C. F. Langworthy, Chief of the Office of Home Economics, Department of Agriculture; and Sarah Louise Arnold, Dean of Simmons College. This book was also approved by H. C. Sherman of Columbia University.

With this authorship it goes without saying that the book is a mine of correct information. It is written for use with children to present the facts of nutrition simply and interestingly, and to show why food saving and sharing are necessary now as well as during the war.

The make-up of the book is excellent. It is simply bound, with the Food Administration seal on the cover and is attractively illustrated. In fact it is the kind of book that the child will carry home and the older people will pick up and read, so that its message will reach more than the child.

After an introductory chapter, the next six chapters are devoted to the development of the idea of children going to an immense world food fair in which the appropriate foods are grouped into booths according to the part that those foods play in body nutrition. The idea is a clever one, probably taken from the arrangement at the Chicago Food Show during the Conservation period, in which the effectiveness of this grouping was well proved. The following chapters tell why Europe is hungry, where the food of the world is, what we did about it during the war and what we must still do. The final chapter brings the lesson of saving home to the child.

The selection of material is excellent and the facts are interestingly presented. A summary of points worth remembering at the end of each chapter makes the message all the clearer. One wonders, however, if the book is intentionally addressed now to older, now to younger children. There seems to be some unevenness in the writing. It is to be regretted that there is not a whole chapter on cost, instead of having that side of the subject tucked into the chapter on Fats. Some parents may think that, in the chapter on Hungry Europe, the book comes too near teaching hate of the enemy in such sentences as "the Germans set to work deliberately to do as much harm as possible." "Everyone knows . . . how they (the Germans) murdered and tortured and looted and destroyed," etc.

The elementary teacher should welcome this book with joy, for nowhere else will she find this material stated in language suited to young children, and much of the material is of permanent value in the teaching of food work. The ridiculously low price of the book will make it available everywhere.

MABEL T. WELLMAN,
Indiana University.

NEWS FROM THE FIELD

The New England Home Economics Association. The December meeting was held at Simmons College. The general topic was "The Message of the Hour," and the speakers were Mrs. Nathaniel Thayer, Chairman of the Women's Committee of the Council of National Defense, Massachusetts Division; Martha Van Rensselaer, U. S. Food Administration. The latter said "Our program is one of Thrift; to waste is wrong and uneconomic." "Home Economics leaders and teachers must get the community idea because citizenship is only an extension of our home ideas." Mrs. Thayer urged the holding together, in the same spirit that was maintained throughout the war, to do whatever presented itself. "Americanization is one of the greatest and most vital problems in this country."

The January meeting also held at Simmons College, presented a program of Thrift. "The Budget for the Individual" was discussed by S. Agnes Donham of the Garland School of Homemaking, and "Thrift in the Household as a part of the National Savings Campaign of 1919," by S. Maria Elliott, Assistant Professor of Household Economics, Simmons College. Miss Elliott gave a report of the conference at Washington, and indicated lines of action for the teacher and homemaker.

The February meeting was devoted to child welfare. "Child Welfare and the Work of the Children's Bureau" was presented by Dr. Dorothy Reed Mendenhall, Children's Bureau, U. S. Department of Labor; and "Existing Agencies for Child Conservation Work in Massachusetts" by Dr. Merrill E. Champion, Director of the Division of Hygiene, State Department of Health.

At the March meeting the household budget was discussed by Miss Donham, as a

continuation of her series; and Dr. Frederic W. Howe, of the Framingham Normal School, led a general discussion of problems of interest to home economics teachers of today.

The officers of the association are: President, Mrs. Schuyler F. Herron, 383 Harvard St., Cambridge, Mass.; Corresponding Secretary, Mrs. R. Harold Brown, 266 Brookline Ave., Boston, Mass.; Recording Secretary, Helen E. Lockwood, Simmons College, Boston, Mass.; Treasurer, Alice W. Clement, 275 Warren St., Roxbury, Mass.; Councilor, Laura Comstock, Amherst, Mass.

The Yonkers Home Economics Association has had as speakers, at its monthly meetings, Commissioner Dillon, Mayor Wallin, Dr. Waldron of the Bureau of Child Hygiene, Mrs. Owen Kildare, Mrs. V. Everit Macy, and Miss Cora Winchell. Dr. Benjamin R. Andrews spoke at a public meeting held with the Chamber of Commerce. The association published two food bulletins, held a series of weekly conferences for housewives, and gave demonstrations in canning and drying, fireless cookery, and conservation of clothing. The past year shows a steady growth of membership from ten to one hundred and fifty. Mrs. Jacob Emery is the newly elected chairman.

The American Dietetic Association. At a meeting of the Executive Committee, January 22, 1919, it was decided to accept the invitation of the American Hospital Association to hold the next annual meeting with them in Cincinnati, September 8-12, 1919.

Persons eligible to active membership are: Graduates of at least a two year course in home economics, from a recognized school; graduates of a one year course in home economics (prior to June 1917), who, following

graduation have had one year of successful experience in dietetic work; research workers who have contributed to the advancement of dietetics; practising physicians in good standing; and persons whose special work is allied with dietetics.

The annual dues are \$2.00. Application for membership should be made to the secretary, Miss E. M. Geraghty, New Haven Hospital, New Haven, Conn.

The New York Association of Dietitians held their Annual Meeting in February in the Nurses Training School Hall, New York Post Graduate Hospital.

Among many items discussed during the year were the following: Courses for Pupil Dietitians, Courses in Dietetics for Nurses, Canteen Work, Food Problems in Russia, New Text Books, New Ideas in Institutional Equipment.

The membership for the year showed an increase from fifty-two to seventy, including an honor roll of seventeen, eleven of whom have seen foreign service. Those elected to honorary membership are: Miss Isabel Ely Lord, Miss Emma Gunther, Miss Adelaide Nutting, and Mrs. Mary S. Rose.

The new officers for the coming year are: President, Eleanor Wells, Teachers College; Corresponding Secretary, Charlotte Addison, New York Post Graduate Hospital; Recording Secretary, Alice Penrose, Central Branch, Y. W. C. A.

The Home Economics Department of the University of South Dakota improved its great opportunity to help during the war, each member giving most willingly of her time and energy.

Professor Eva R. Robinson, who became Mrs. N. E. Dawes on February 14, was made Director of Home Economics for South Dakota by the Food Administration, and gave much time to the work of Food Conservation. A small bulletin of Food Conservation Dishes was prepared immediately, and later, with the help of Miss Ruetta Day, the Timely Cook Book was published.

When the S. A. T. C. was organized in the University, before the new barracks were ready, the food laboratory was turned into a cafeteria, and Miss Robinson and Miss Day, assisted by some town ladies, served meals to 80 men for 10 days. They then organized and conducted the barracks kitchen for three weeks, feeding about 200 a day. During the epidemic of influenza, meals were sent from the department until the hospital kitchens were equipped and the Red Cross helpers were organized into working squads.

In the clothing department Miss Mae Wilson designed the famous S. D. University comfort kit, and over 250 of these were made, either by students of the department or through Miss Wilson's efforts. The sewing classes under Mrs. Edith Abell made 100 money belts, 40 hospital bed shirts, 60 suits of pajamas and 50 hospital bags. Mrs. Abell also conducted classes in knitting, and gave instruction in the surgical dressings in the Red Cross room.

The Home Economics Section of the Indiana State Teachers Association has been organized for several years, but not until April, 1917, were plans perfected for a definite and active organization.

The committee on membership and organization drafted a constitution and by-laws which were unanimously adopted at the regular business meeting in October, 1917. A membership drive resulted in seventy paid up active members.

The Executive Committee secured the services of Mrs. Henrietta Calvin from the Bureau of Education, Washington, D. C., to address the Section at the annual meeting in October, 1918. The regular 1918 meeting of the State Teachers Association was postponed and later cancelled, due to the epidemic of influenza.

The Home Economics Section especially has suffered on account of this irregularity because plans were being developed which would greatly strengthen the Section and extend its influence.

The Institution Economics Section of the American Home Economics Association will meet at the University of Wisconsin, Madison, June 9-13.

Madison is beautifully located in a lake country, and will afford opportunity for enjoying the afternoons which are left open for conferences, boat rides, drives, and tramps.

The forenoons and evenings will be devoted to the program which includes papers and discussions on the following subjects: Courses of Study for Institutional Economics; Dormitory Administration with Emphasis on All Phases of the Work; Cafeteria Management in Both the College and Commercial Worlds, with Special Emphasis on Marketing and Organization; School Lunch Problems; Restaurant and Coffee-Shop Management; Hospital Administration; New Phases of Institution Work, such as Supervising Housekeepers in Wealthy Homes and Camp Directors.

The program will be conducted by administrators and teachers in colleges and schools, by dietitians, and by others actively engaged in the business world. It is expected that there will be some exhibits of institutional furnishings and equipment.

For program and particulars as to accommodations, address Miss Elsie P. Leonard, Chairman, Chadbourne Hall, Madison, Wis.

The Institution Economics Section will also present a program at the Annual Meeting of the A. H. E. A.

The National Conference of Social Work meets at Atlantic City June 1 to 8, and much of its program should prove of distinct value to the home economics worker. The Social Work Committee of the American Home Economics Association is hoping to arrange several informal discussions of problems of social work in home economics. Home economics workers who are planning to attend the Conference are urged to write the Chairman of the Social Work Committee, Miss Emma A. Winslow, 105 East 22nd Street, New York City, or to get in touch with her at the Conference.

Copies of the Conference program may be obtained from Mr. William T. Cross, Secretary, 315 Plymouth Court, Chicago.

Practice in Homemaking Adjustments.

The Committee on Home Economics of the New York Charity Organization Society is offering to a limited group of women, trained in home economics, the opportunity of doing practice work in the adjustment of various types of homemaking problems. A special course is to be given under the direction of the Committee from June 9 to July 5 of this year, and Teachers College, Columbia University, has already arranged to give both graduate and undergraduate credit for the course, the amount varying according to the quality and amount of the student's work as indicated by the reports of the supervisors and the student's diary record of work performed.

Four days a week are to be spent in carefully planned field work with one of a group of specially selected social agencies in New York City. One day a week is to be used for lectures, discussions, and visits to institutions and social agencies doing work of immediate interest in connection with home economics; and one-half day a week for round table discussions of field work experiences.

Membership in the group is open to college juniors as well as graduates. No fees are to be charged for the training to be given. The size of the group is to be limited to twenty-five, and effort will be made to select members who will represent a variety of colleges and a variety of previous experiences, and who will probably derive the maximum benefit from their field work.

Miss Emma Winslow is to have charge of the work of the group under the direction of a special Sub-committee of the Committee on Home Economics, consisting of Miss Cora M. Winchell of Teachers College, Chairman, Dr. Mary Swartz Rose of Teachers College, Miss Isabel Ely Lord and Miss Jessie A. Long of Pratt Institute, Mr. Porter R. Lee of the New York School of Philanthropy, and Miss J. C. Colcord of the New York Charity Organization Society. Further information concerning the plans for the course may be secured from Miss Winslow or from any member of the Sub-committee.

BLUE RIDGE, NORTH CAROLINA

You are on your way to the Twelfth Annual Meeting of the American Home Economics Association, June 23 to 28, 1919. The long train noses its way between the rounded green peaks of the Blue Ridge mountains and comes to a stop as the porter calls: "All out for Black Mountain." The taxicab drivers deafen you with their insistent: "Fifty cents to Blue Ridge. Take your suitcases." A little scattered village lies about the station. Half a mile to the east begins a long steep slope of solid green, broken half way up the mountain side by the clear white outline of a big comfortable-looking building, Robert E. Lee Hall, which marks your destination.

The last part of the drive brings you under the trees and along the banks of rhododendron that make Blue Ridge a paradise of beauty in June. Then you come out into the open grounds about the buildings, where you may view the sweep of the valley below and peak after peak of blue mountain beyond. You register, and are led away to a cottage clinging to the mountain side above, or snuggled away by the stream below the main buildings. If your reservation was late you may have to take a less romantic and slightly more expensive room in Robert E. Lee Hall.

The plant belongs to the Blue Ridge Association, and is operated primarily for the Y. M. and Y. W. C. A. The student conference this year closes June 22; consequently not many rooms will be available before Monday, June 23. By all means plan to stay the entire week, and longer, if possible. The rate is \$12.00 to \$15.00 per week for room and board. Most rooms accommodate two, but single rooms may be had. The Blue Ridge Association aims simply to pay expenses, not to make a profit.

The cottages have 4 to 8 rooms, a sleeping porch, and one or two bath rooms with hot and cold water. One may sleep indoors or on the porch,—it is delightfully cool everywhere. The cot beds are comfortable; all furnishings are very simple. One should plan for much out of doors tramping and driving, and bring clothing suitable for the mountain trails.

Delightful drives may be arranged for without exorbitant charge. Biltmore and Asheville are about twenty miles away, Hendersonville, Chimney Rock, and other famous spots in the "Land of the Sky" are farther, but within driving distance. Montreat and Ridgecrest, headquarters, respectively, of Presbyterian and Baptist conferences, are each about six miles away.

The Southern Home Economics Association is to have separate programs on Tuesday and Thursday evenings; at other times it will make itself a part of the American Association. The Southern Association extends a most sincere welcome to the American Association and particularly to those members who have not before been in the South.

The full program of the meetings, including the section meetings, will be sent as soon as possible to all members of the A. H. E. A. The Extension Section has planned programs for June 26 and 27, and the other Sections will arrange theirs later.

Reservation should be made not later than June 10, if possible, to the Blue Ridge Association, Blue Ridge, N. C. They should specify Cottage or Hall. Groups desiring to be together in cottages should specify this clearly in making reservations. Mail and telegrams should be sent to Blue Ridge, but railroad tickets read to Black Mountain. Be sure to ask for tourist rates, as whatever rates are available for summer resorts will apply.

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WHEN, HOW MUCH, AND TO WHOM SHOULD HOME ECONOMICS BE TAUGHT?¹

CARLOTTA C. GREER

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Formerly there was one type of organization for the twelve-year course of the public school, viz., the elementary grades from the first to the eighth, and the high school from the ninth to the twelfth. Within the past few years this division has, in many schools, changed. Because of a better understanding of the mental processes and abilities of boys and girls a number of educators have thought it best to place the division between the elementary and high school course at an earlier date. The junior high school has come into being as a result of this idea. Hence, in many schools, there are the elementary grades, and the junior and senior high schools. This is often called the 6-3-3 plan. Though this plan of division has not been adopted everywhere, it is becoming more and more popular, and we will base our discussion upon problems arising from such an organization.

The first questions to be considered are:

Should home economics be given in the elementary grades, i.e., in grades one to six, where the interests and activities of the child are largely those of play? Would a course offered in these years justify the efforts of the pupils and teacher?

¹ Presented at the meeting of the American Home Economics Association in connection with the Division of Superintendence, N. E. A., Chicago, February, 1919. This paper was the introduction to a Round Table discussion on its topic. It was therefore prepared to raise questions for discussion, not to give the writer's opinion.

If home economics is offered in the fifth and sixth years, which subject,—food or clothing—should be given first? Are the larger movements of cooking better adapted to the ability of the younger child than the smaller motions of sewing?

The plan of adapting school work to the needs of children in particular conditions or communities is one of the general accepted principles of modern education. Is there in the elementary grades any special type of pupil who needs a course in home economics even though the subject is not offered generally to all elementary pupils? In foreign districts where many pupils are over age, would a course in home economics be advisable?

The expense of equipping schools for household arts must be taken into consideration. If home economics is to be offered in the junior and senior high schools, does the expense of equipment preclude the teaching of the subject in grades below the seventh?

Is compulsory work in home economics generally advisable? If so, in what grades should it form a part of every child's education? Is the junior high school the place for such a procedure?

The abnormal conditions existing in the industrial world during the past year or two have affected the boy and girl of wage-earning years, and there have been many high school girls and boys lured into industry. In certain schools courses in homemaking have not been as popular, among the senior high school girls, as commercial courses, and the question arises whether the demands of the business world have made homemaking activities less appealing to the girl?

In analyzing this condition, it is possible that we need to take into consideration a factor other than industrial pressure. In some localities, the establishment of the junior high school and this country's participation in the war took place in the same period. It may be that the junior high school—and not changed industrial conditions—has affected the home economics course of the senior high school. To make the latter consideration specific: Will a well-rounded course in home economics in the junior high school affect the number of pupils electing work in the senior high school? Will the pupils feel that the junior high school gives them sufficient work in this subject?

It is a fact that a greater number of pupils will be reached by placing home economics courses in the junior rather than in the senior high school. Since it is a subject of great importance in the life of all girls and since it fills an important place in democratic education, the matter

of reaching the greatest numbers should be a consideration well worth regarding. On the other hand, certain distinct advantages might be gained by placing home economics in the senior high school, particularly in the eleventh and twelfth grades. By the time the pupil is a junior or a senior, she will have studied certain of the sciences which aid in elucidating home economics and which make it possible to present certain phases of household arts as applied science. Because of the more mature ability of the eleventh and twelfth grade pupil, she would be able to comprehend more fully the intricate social and economic problems pertaining to the home.

One of the serious problems of secondary education is to hold pupils in school until their prescribed course has been completed. All earnest educators are considering this question seriously. Can the home economics course do anything to solve this problem? If so, what is the best arrangement of work?

These questions might be considered:

Since home economics, especially food study and garment-making, is an attractive subject to most girls, will the placing of household arts in the junior high tend to hold the girls in school during the period when they are so apt to leave it?

On the other hand, if these subjects are placed in the senior high school, will the anticipation of an interesting activity and study hold the girl in school?

In former days very much was said about logical courses of study, logical development of a subject, and the logical methods of education. For the *elementary and secondary* school many educators are believing that logical methods should be supplanted by the psychological. In his "Democracy and Education" Dewey explains the difference in the two methods. He says: "The chronological method which begins with the experience of the learner and develops from that the proper modes of scientific treatment is often called the 'psychological' method in distinction from the logical method of the expert or specialist. The apparent loss of time involved is more than made up by the superior understanding and vital interest secured. What the pupil learns he at least understands."

In discussing when home economics should be offered to pupils or where it should be placed in a course of study, it may be well to consider the relative positions of home economics and related sciences in a curriculum,—to consider whether the logical or psychological plan should

of such ability in every individual, but the school cannot accomplish it alone. This eliminates education for homemaking as a separate school problem and a distinct school subject."

According to this idea, it is impossible to teach the indefinable art of home making to either boys or girls. Whether or not we accept this opinion it is unquestionably true that the study of many phases of home economics will be valuable to the boy and aid in his own personal development of the art of homemaking.

The matter of housing in our cities and towns was a serious problem during the war. Funds and workers were not available for building houses fast enough to supply the demands of our population. At the present time, the number of houses is still inadequate and doubtless will be until it is possible for the money market to supply sufficient funds for the construction of homes. An understanding of the maintenance of proper sanitary conditions in a home by the householder as well as the housekeeper would doubtless be especially valuable during the period of dwelling shortage.

If it is deemed wise to offer home economics to boys, should the same type of course be given them as is offered to girls? Should a home economics course for boys embrace administrative, economic, and sociologic problems rather than manipulative processes?

Most persons interested in modern education have believed that a wise (i.e. sane, not strained) correlation of our so-called academic and industrial or technical studies is desirable. Teaching problems in mathematics which involve data secured from home activities and whose solution furnishes valuable information regarding household management; using home problems for themes in the English class; making applications in chemistry and physics which elucidate processes in the administration of a home,—these are all valuable practices in education. But teaching of this kind involves work not only for the home economics teacher, but for teachers of mathematics, English, and science. If the mathematics teacher is to do effective teaching in applied problems in home economics, he must understand something of home economics; if the chemistry teacher is to make applications in chemistry which involve matters of the girl's interest and experience, he must also understand something of home economics.

If the courses offered in our public schools to all girls are to center about phases of homemaking, does it not seem necessary that all teachers of the elementary and secondary girl should have at least a general

survey of household arts? For the teaching of such subjects as chemistry, or other sciences, and art, should not teachers have specific training in certain phases of home economics?

If in the school of tomorrow, all pupils,—both boys and girls—are given some training in the economics of the home, all our teachers of the future will have something of a household arts background, and the need of teachers of subjects other than household arts for training in this subject will then be satisfied.

TEXTILE LESSONS FOR HOMEMAKERS

GRACE G. DENNY

University of Washington, Seattle

A series of lessons on purchasing fabrics and household textiles was recently given a group of housekeepers through the services of the Home Economics department of the University of Washington.

The choice of subjects was made by the women of the group from the following list suggested by the teacher:—sheeting, towelling, blankets, apron goods, dress fabrics, materials for underwear, materials for juvenile play clothes, trimming for underwear, wool dress goods, and the following ready made garments: house dresses, muslin underwear, lingerie waists, girls' middies, children's rompers, hosiery, and boys' suits. The list includes purchases typical of the average household.

The women of this group were most deeply interested in learning how to choose towelling, blankets, and dress goods.

The lessons were conducted as follows.

I. HOW TO JUDGE TOWELLING

Fifteen 1 yard lengths of towelling (suitable for tea towels and hand towels or face towels) were bought at a local store. Each piece was labelled with the current price and a number. The range in quality represented those grades most frequently sold in the store.

Each woman was given a copy of the accompanying score card¹ and an opportunity to examine the samples. With no explanation as to the relative merits of the towelling or the composition of each piece, the

¹ See page 245.

women were asked to put down estimates of each towel in the column corresponding to the number on that towel. Two score cards were filled; one for tea towels and one for face or hand towels. (Bath towels were considered incidentally in this lesson.) Since many women use flour or sugar sacks for tea towels, samples of these with prices and also the unbleached muslin sold for this purpose were included.

The four headings given on the score card are usually conceded most important in the selection of towelling. The points under each are merely explanatory, as "appearance" is determined by color, weave, and design (as in case of fancy huck).

In weighting the four points it is assumed that the majority of housekeepers are limited first as to cost. The scoring on this point is a personal matter, depending upon what is "expensive" or "reasonable" for the individual.

After the samples had been judged, the teacher held up one sample at a time calling its number and asking for the total points or "score" given that piece by each member of the group. There was sufficient variation to cause keen interest and discussion. When the women began to ask which pieces were all linen, and how the teacher thought they should be rated, she explained the simple tests for distinguishing cotton from linen. A general discussion followed as to good and bad points of the samples, including the relative amounts of sizing, color of stripe, wearing and laundering qualities.

In the course of the discussion, all information necessary in the choice of towelling was given. It led to the source of flax, reasons for the present shortage, and continued high prices, explanation of the discrepancies in prices on current stock, possibilities for flax manufacture in the Pacific Northwest, a statement concerning the successful growing of fiber flax in Washington and Oregon, and, finally, suggestions for conserving linens on hand.

Doubtless the success of the lesson was due largely to the fact that these housekeepers were approached as experienced buyers who already had practical knowledge of materials. The method used stimulated their interest and made their minds receptive to the information which seemed to grow out of these towels which they held in their hands. A lecture on flax growing, linen manufacture, and the state of the world markets, might not have made connection with their kitchen towels or helped them in the least to *purchase* towelling.

The fact that these towels were to be had in a local store at the prices quoted added reality to the class exercise. It happened that one store was unusually well stocked with towelling of all grades. No difficulty was experienced in showing goods from a particular store, since in the series of lessons, articles or fabrics were borrowed or purchased for the class from all the stores.

II. HOW TO JUDGE BLANKETS

Nine blankets of average grade were borrowed from department stores. They were labelled with numbers from one to nine. Each woman was given a copy of the accompanying score card¹ and an opportunity to examine the blankets. She recorded her estimate of each blanket in the column corresponding to the number on the blanket. Cost was put at thirty points because this article is purchased less frequently than towelling, and expense is sometimes disregarded in the effort to procure "warmth" and "durability." "Warmth" is determined by the composition of the blanket and the arrangement of the fibers, i.e., a highly napped blanket includes more air spaces than a comparatively smooth one. "Durability" depends upon the strength of yarns, closeness of the weave, and character of the nap. A fluffy cotton blanket, for example, will not remain "fluffy" long and a highly napped part wool blanket will lose much of its wool from the surface.

As in the case of towelling, estimates differed. One woman might be willing to pay \$15.00 for a blanket and could give the full score to "cost," while another would have to choose a cheaper grade and would lower the score on "cost" for the \$15.00 blanket.

When all the scores were compared, the teacher took up one blanket after another and pointed out features which had been overlooked by the women. For example, many blankets were plainly labelled by the manufacturer as "all pure cotton," "wool nap," "warranted pure fleece wool," and one said "guaranteed pure wool," and "no admixture of shoddy, wastes, or noils." Sizes were compared, bits of nap were pulled off and burned to show the character of the fibers. Yarns were examined, weights of blankets compared, and finally comments made on washing and dry cleaning of different types.

These housekeepers went home to examine their own blankets in the light of what they had learned and to think more intelligently about future purchases.

¹ See page 245.

III. HOW TO JUDGE DRESS FABRICS

The lesson on dress goods included three kinds: cotton goods for house dresses, wool dress goods, and summer dress fabrics.

The women had become familiar with the use of score cards and were able to place estimates on all the samples in the time allowed. The score cards differed according to the factors involved in the choice of each type of fabric; for example, the chief consideration in purchasing cotton goods for house dresses is the laundering quality.

Seven samples were shown for house dresses, including gingham, percales, and crepes; ten of wool goods; twelve of summer dress fabrics. This lesson was the most popular of the series partly because of the aesthetic appeal.

The same method was used as in former lessons. Points not included in the score cards were brought out, as becomingness of certain color and textures to types of complexion, age, and height; ease in handling certain fabrics above others; calculation for cutting napped fabrics and plaids; methods of washing colored cottons. The use of the score card in this sense is limited to fabrics or garments for one purpose. It may be employed only as a means of stimulating thought and encouraging the use of judgment in choice.

This series of lessons has given a miniature shopping experience which is our purpose in all textile teaching.

Kinds of toweling shown, with prices

| NUMBER | KIND | COMPOSITION | WIDTH | PRICE |
|--------|-------------------|------------------------------|---------------|--------|
| | | | <i>inches</i> | |
| 1 | Glass | Linen | 20 | \$0.50 |
| 2 | Glass | Cotton | 16½ | .25 |
| 3 | Crash | Cotton (blue stripe) | 16½ | .28 |
| 4 | Crash | Linen | 15½ | .30 |
| 5 | Birdseye | Cotton (sized) | 16½ | .25 |
| 6 | Glass | Linen (loose) | 16½ | .30 |
| 7 | Twill | Cotton (heavily sized) | 14 | .15 |
| 8 | Unbleached muslin | Cotton | 36 | .20 |
| 9 | Unbleached muslin | Cotton | 36 | .25 |
| 10 | Huck | Linen | 16½ | .60 |
| 11 | Huck (figured) | Cotton | 15½ | .29 |
| 12 | Crash | Linen (half bleached) | 16½ | .40 |
| 13 | Crash (Stevens) | Linen (half bleached) | 16 | .35 |
| 14 | Crash (brown) | Cotton, some tow and jute | 16 | .18 |
| 15 | Huck (figured) | Mercerized cotton | 17½ | .65 |

Sugar and flour sacks, 1 yard square, 75 cents per dozen.

Score cards^a

| Towelling | | Blankets | |
|--------------------------|-----|-------------------------|-----|
| Cost..... | 40 | Cost..... | 30 |
| Width..... | | Size..... | |
| Absorbing qualities..... | 30 | Warmth..... | 35 |
| Weave..... | | Wool..... | |
| Composition..... | | Wool and cotton..... | |
| Linen..... | | Cotton..... | |
| Union..... | | Character of nap..... | |
| Cotton..... | | Durability..... | 20 |
| Durability..... | 25 | Strength of yarns..... | |
| Twist of yarn..... | | Closeness of weave..... | |
| Closeness of weave..... | | Character of nap..... | |
| Appearance..... | 5 | Appearance..... | 5 |
| Color..... | | Color..... | |
| Weave..... | | Ease in Cleansing..... | 10 |
| Design..... | | Total..... | 100 |
| (As in huck)..... | | | |
| Total..... | 100 | | |

Cotton dress goods for house dresses

| | |
|----------------------------------|-----|
| Cost..... | 35 |
| Width..... | |
| Laundering quality..... | 45 |
| Permanence of dye..... | |
| Durability of cloth..... | |
| Shrinkage..... | |
| Ease in washing..... | |
| Ease in ironing..... | |
| Appearance after laundering..... | |
| Beauty..... | 20 |
| Color..... | |
| Design..... | |
| Total..... | 100 |

Summer dress goods

| | |
|--------------------------------------|-----|
| Cost..... | 35 |
| Width..... | |
| Beauty..... | 35 |
| Color..... | |
| Design or pattern..... | |
| Texture..... | |
| Durability..... | 30 |
| Will it pull apart or rough up?..... | |
| Will it wrinkle badly?..... | |
| Will it soil easily?..... | |
| Will it clean easily?..... | |
| Total..... | 100 |

Wool dress goods

| | |
|--|-----|
| Cost..... | 30 |
| Width..... | |
| Cost of upkeep..... | |
| Dry cleaning..... | |
| Beauty or aesthetic quality..... | 30 |
| Texture (surface effect)..... | |
| Design or pattern..... | |
| Weave or kind of plaid..... | |
| Durability..... | 40 |
| Wearing quality..... | |
| Ability to look well after continued wear..... | |
| Total..... | 100 |

List of blankets shown, with prices in March, 1919

| | |
|--|---------|
| Light weight all wool plaid..... | \$15.00 |
| Cotton and wool mixed..... | 10.00 |
| Wool nap (all cotton)..... | 6.95 |
| Blanket sheet (cotton napped, light weight 58 x 76)..... | 2.95 |
| Beacon (all cotton 66 x 80)..... | 5.75 |
| Fine wool (some cotton)..... | 14.00 |
| Wool and cotton 66 x 80..... | 15.00 |
| Wool and cotton 70 x 80..... | 12.00 |
| Nashua wool nap 72 x 84..... | 7.50 |

^a The score cards used had, at the right, a sufficient number of columns for recording scores for each sample.

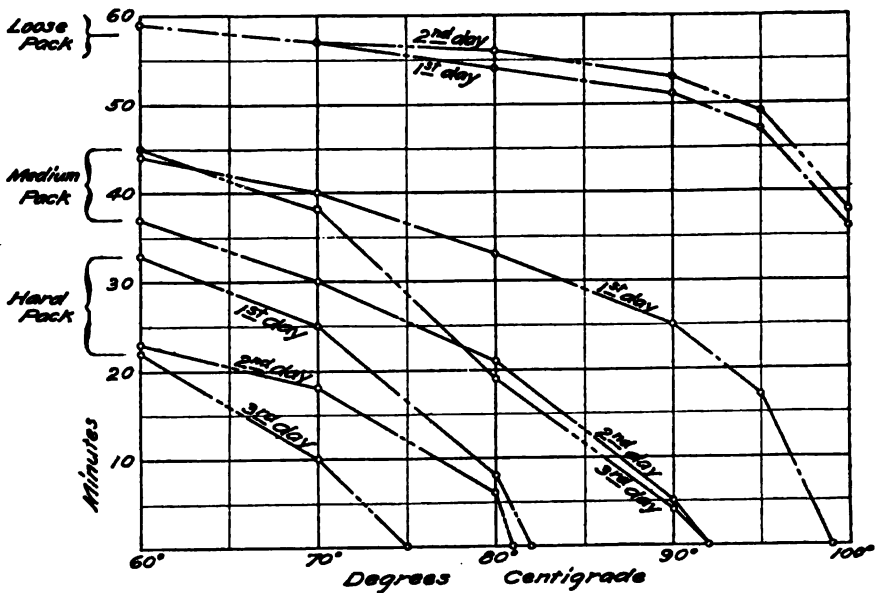
TABLE 1

Effect of pack upon interior temperature of contents (spinach) of glass jars (boiled 60 minutes after water-bath began to boil)

| PACK | WEIGHT OF VEGETABLE IN QUART JAR | MAXIMUM TEMPERA- TURE OF CENTER OF JAR | MINUTES CONTENTS OF JAR WERE HELD AT OR ABOVE VARIOUS TEMPERATURES C. | | | | | |
|-----------------|---|--|---|-----|-----|-----|-----|-------------|
| | | | 60° | 70° | 80° | 90° | 95° | 99- 100° |
| <i>grams</i> | | | | | | | | |
| Loose..... | 408 | | | | | | | |
| First day..... | | 99°-100° | 59 | 57 | 54 | 51 | 47 | 36 |
| Second day..... | | 99°-100° | 59 | 57 | 56 | 53 | 49 | 38 |
| Third day*..... | | | | | | | | |
| Medium..... | 751 | | | | | | | |
| First day..... | | 98° | 44 | 40 | 33 | 25 | 17 | |
| Second day..... | | 92° | 37 | 30 | 21 | 5 | | |
| Third day..... | | 92° | 45 | 38 | 19 | 4 | | |
| Hard..... | 934 | | | | | | | |
| First day..... | | 82° | 33 | 25 | 8 | | | |
| Second day..... | | 81° | 23 | 18 | 6 | | | |
| Third day..... | | 75° | 22 | 10 | | | | |
| Hard†..... | 931 | | | | | | | |
| First day..... | | 82° | 19 | 11 | 2 | | | |
| Second day..... | | 54° | | | | | | |
| Third day*..... | | | | | | | | |

* Can broke.

† Leaves were stripped from center rib.



GRAPH FROM TABLE I

TABLE 2

Effect of depth of water-bath upon interior temperature of contents of glass jars (boiled 60 minutes after water-bath began to boil)

| SIZE OF JAR | DEPTH OF BATH | CONTENTS OF JAR | MAXIMUM TEMPERATURE OF INTERIOR OF JAR | MINUTES CONTENTS OF JAR WERE HELD AT OR ABOVE VARIOUS TEMPERATURES C. | | | | | |
|----------------|---------------|--------------------|--|---|----------|----------|----------|----------|----------|
| | | | | 60° | 70° | 80° | 90° | 95° | 99°-100° |
| Pint..... | inches | | | | | | | | |
| | 3 | { Water Carrots | 99°-100° 98° | 61 54 | 59 50 | 56 41 | 53 33 | 50 21 | 40 |
| | 7 | { Water Carrots | 99°-100° 99°-100° | 72 60 | 68 55 | 63 47 | 59 38 | 55 28 | 47 6 |
| | | | | | | | | | |
| Quart..... | 3 | { Water Carrots | 99°-100° 85° | 54 26 | 51 18 | 48 7 | 44 | 39 | 30 |
| | 6 | { Water Carrots | 99°-100° 96° | 60 56 | 56 52 | 52 46 | 47 32 | 44 17 | 36 |
| | 9 | { Water Carrots | 99°-100° 99°-100° | 75 61 | 70 59 | 65 52 | 59 38 | 54 24 | 46 1 |
| | | | | | | | | | |
| Two-quart..... | 3 | { Water Carrots | 99°-100° 76° | 50 16 | 47 10 | 43 | 38 | 33 | 25 |
| | 6 | { Water Carrots | 99°-100° 96° | 57 55 | 53 48 | 49 39 | 44 25 | 41 8 | 29 |
| | 9 | { Water Carrots | 99°-100° 97° | 72 60 | 67 54 | 62 46 | 57 33 | 53 16 | 39 |
| | | | | | | | | | |

It may thus be seen that with the more shallow water-baths the maximum interior temperatures reached, 98°, 85°, 76° in the pint, quart, and 2-quart jars, respectively, are considerably lower than those reached in the deeper baths, 99°, 99°, 97°, and the higher temperatures were maintained for a longer period in the latter cases.

Effect of initial temperature of bath on interior temperature. Table 3 gives figures covering the first hour's sterilization process in the hot water method; that is, when the water-bath is boiling before the jars are placed therein. For comparative purposes figures are given in the same table for the first day's sterilization of jars filled with the same kind of material surrounded by water at temperatures near 17°C. and registering a temperature not far different when placed in the bath. It

will be seen at once that with the deeper bath it is much the more efficient process to start with cold water surrounding the jars, since the maximum temperature is higher, 99° instead of 95°, and time of maintenance of this maximum is longer, 24 and 16 instead of 12 minutes.

TABLE 3

Effect of initial temperature of water-bath upon interior temperature of contents (carrots) of glass jars (boiled 60 minutes after water-bath began to boil)

| SIZE OF JAR | DEPTH OF BATH | MAXIMUM TEMPERATURE OF INTERIOR OF JAR | TEMPERATURE OF BATH WHEN JARS ARE IMMERSSED | MINUTES CONTENTS OF JAR WERE HELD AT OR ABOVE VARIOUS TEMPERATURES C. | | | | | |
|----------------|---------------|--|---|---|----------|----------|----------|----------|----------|
| | | | | 60° | 70° | 80° | 90° | 95° | 99°-100° |
| | <i>inches</i> | | | | | | | | |
| Pint..... | 3 | { 99°-100° 98° | 100° 17° | 55 54 | 52 50 | 49 41 | 44 33 | 39 21 | 24 |
| Quart..... | 3 | { 99°-100° 85° | 100° 17° | 53 26 | 50 18 | 47 7 | 40 | 34 | 12 |
| Two-quart..... | 3 | { 90° 76° | 100° 17° | 35 16 | 28 10 | 17 | | | |
| Pint..... | 7 | { 99°-100° 99°-100° | 100° 17° | 49 60 | 47 55 | 41 47 | 33 38 | 21 28 | 6 |
| Quart..... | 6 | { 94° 96° | 100° 17° | 38 56 | 31 52 | 22 46 | 8 32 | 17 | |
| Two-quart..... | 6 | { 87° 96° | 100° 17° | 27 55 | 21 48 | 8 39 | 25 | 8 | |
| Quart..... | 9 | { 95° 99°-100° | 100° 17° | 40 61 | 34 59 | 26 52 | 12 38 | 24 | 1 |
| Two-quart..... | 9 | { 95° 97° | 100° 17° | 41 60 | 35 54 | 28 46 | 12 33 | 16 | |

Effect of blanching on interior temperature. A test was carried out, figures for which are not here given, to determine whether or not blanching for 10 minutes affects the rapidity of heat penetration during sterilization. The material tried was string beans cut into $\frac{3}{4}$ inch lengths, and the results were negative, leading to the conclusion that 10 minutes preliminary cooking does not soften string beans to the extent of allowing a closer pack. Linked to the recently shown evidence that cold shock,

as such, does not affect favorably the sterilization of canned goods,³ this seems to exclude the possibility of blanching as a factor of sterilization, unless it be along the line of an initial cleansing or an adverse change in the hydrogen ion concentration.⁴ These results differ from those obtained by Miss Denton.⁵

Summing up the evidence which this and previous investigations have afforded, the following conclusions seem warranted.

1. The completeness of sterilization of vegetables packed in glass jars and heated in a water bath for one hour on three successive days, counting time from the beginning of boiling of the water-bath, is questioned.

2. The water-bath should completely immerse the jars, and should be brought to the boiling point after immersion of the jars.

3. When a water-bath method is used very great care should be exercised in the pack. Loosely packed jars only should be used in canning by usual home methods.

4. Home-canned vegetables, particularly solid packed jars, should always be heated before use to avoid the danger of poisoning by the toxin of *B. botulinus*, the spores of which are exceedingly resistant to heat.⁶

³ The Influence of Cold Shock in the Sterilization of Canned Foods, Bushnell, L. D., *Jour. Ind. and Eng. Chem.*, 10 (1918), pp. 432-436.

Utility of Blanching in Food Canning: Effect of Cold Shock upon Bacterial Death Rates, Bruett, Eva M., *Jour. Ind. and Eng. Chem.*, 11 (1919), pp. 37-39.

⁴ Influence of Temperature and Hydrogen Ion Concentration upon the Spore Cycle of *Bacillus Subtilis*, Itano, Arao and Neill, James, *Jour. General Physiology*, 1 (1919), pp. 421-428.

⁵ The Effect of Heat on the Spores of *Bacillus Botulinus*: Its Bearing on Home Canning Methods: Part I, Burke, Georgina Spooner, *Jour. Amer. Med. Assn.*, 72 (1919), pp. 88-92.

AN S. A. T. C. DIET KITCHEN

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Shortly after the opening of the Utah Agricultural College, in the fall of 1918, there came, from the college physician and the army physician, the proposal that the Foods Department of the School of Home Economics take charge of the preparation of food for the patients in the S. A. T. C. hospital on the campus. Plans to this end, and of such nature that the students in the foods classes could carry on a portion of this project as their share of campus "war work," were nearing completion, when, because of the outbreak of influenza, the College was closed on October eleventh.

For a week the Mess Hall provided food for the sick of the S. A. T. C. Then the Foods Department was urged to put into effect its hospital diet plan, even though college was not in session. The total number of sick at this time was a considerable multiple of the probable number (ten to forty in a group of 1000, as indicated by health statistics), and of the number whose diet the Foods Department was equipped to handle. The Staff agreed to be immediately responsible for the diet of twenty-five men who were most ill and required feeding every three hours. During the next four days they made hasty readjustments and preparations in the way of additional and suitable kitchen utensils, and an adequate corps of helpers, in order to assume entire responsibility for hospital food. Eleven days after college closed, the Foods Department served breakfast to one hundred and five patients and thirty-five attendants, and, until the date of the demobilization of the S. A. T. C., had full charge of diet for the sick. During these sixty-one days all meals, served to the sick and their attendants and nurses, were prepared in the foods laboratories in the Woman's Building, and sent from this place to the hospitals on the campus.

While influenza raged, the south wing of our main building served as an emergency hospital for those in quarantine. To provide for the sick whose illness was not influenza the stock-judging pavillion was converted into a temporary hospital designated as the infirmary. If the sick reporting here were discovered to be influenza patients they were taken at once to the emergency hospital; otherwise they remained in the infirmary. Having the sick in two different buildings on the campus

exactly doubled a portion of the work in the diet kitchen, for, although the food for the two places was prepared together, for serving it had to be divided, accurately measured, and packed separately for the two groups of men. Part of the time the food for the attendants and nurses in the emergency hospital was prepared and packed in another laboratory, and by a different corps of workers.

Each day the doctor or nurse in charge in each hospital reported to the diet kitchen supervisors the number to be fed the next twenty-four hours. The number of attendants and nurses in the day shift and the night shift in the emergency hospital was indicated, and the patients here were divided into three groups, namely, No. 1's, who received liquid diet, No. 2's, soft diet, No. 3's, light diet. No. 3 diet served for both patients and attendants in the infirmary, though at nearly every meal there was taken on the trays for one or two men only such part of the full meal as constituted a soft or liquid diet, as the case demanded.

The menu for each day was planned first for No. 3's; from this was selected such foods as were suitable for No. 2's, according to the doctor's directions. While No. 1 diet presented more nearly a distinct problem, economy in labor was effected, as far as possible, by preparing at once those foods suitable for all patients, as cocoa, lemonade, or cream soups, or those foods given alike to No. 1's and No. 2's, as gruels, beef tea, or ice cream, and by making the time of serving such foods coincident or consecutive. The following menus will illustrate.

Typical menus for patients

| No. 1.—15 men | No. 2.—7 men | No. 3.—48 men |
|---------------------------|--|--|
| 5.00 a.m. Hot milk | Cream of wheat, cooked in part milk, and $\frac{1}{2}$ c. raisins Top milk, $\frac{1}{2}$ c. Toast, 1 slice Butter, 1 pat Cocoa (milk), $\frac{1}{2}$ c. | Cream of wheat, cooked in part milk, and $\frac{1}{2}$ c. raisins Top milk, $\frac{1}{2}$ c. Toast, 2 slices Butter, 1 pat Cocoa (milk), $\frac{1}{2}$ c. |
| 8.00 a.m. Cocoa, 1 c. | | |
| 9.45 a.m. | Lemonade, 1 c. | |
| 11.00 a.m. Lemonade, 1 c. | | |
| 12.45 p.m. | Cream of tomato soup, $\frac{1}{2}$ c. Crackers, 2 Toast, 1 slice Soft cooked egg, 1 Brown Betty, $\frac{1}{2}$ c. Lemon sauce, $\frac{1}{2}$ c. Tea, $\frac{1}{2}$ c. | Cream of tomato soup, 1 c. Crackers, 2 Meat loaf, 1 slice (Bean pulp, meat, catsup, bread crumbs) Bread, $1\frac{1}{2}$ slices Butter, 1 pat Brown Betty, $\frac{1}{2}$ c. Lemon sauce, $\frac{1}{2}$ c. Tea, $\frac{1}{2}$ c. |

| | | |
|-----------|-----------------------------|-------------------------------------|
| 2.00 p.m. | Wheat gruel, 1 c. | |
| 2.45 p.m. | Wheat gruel, 1 c. | |
| 5.00 p.m. | Beef tea, 1 c. | |
| 5.30 p.m. | Pea puree, $\frac{1}{2}$ c. | Buttered peas, $\frac{1}{2}$ c. |
| | Potato (boiled), 1 | Potato puff, 1 c. |
| | Toast, 1 slice | Bread, 2 slices |
| | Butter, 1 pat | Butter, 1 pat |
| | Pineapple tapioca | Pineapple tapioca, $\frac{1}{2}$ c. |
| | Milk, 1 glass | Milk, 1 glass |

8.00 p.m. Egg nog, 1 c.
11.00 p.m. Beef tea, 1 c.

November 1, 1918

| No. 1—14 men | No. 2—4 men | No. 3—25 men (Emergency) 24 men (Infirmary) |
|--|---|---|
| 5.00 a.m. Hot milk, 1 c. | | |
| 8.00 a.m. Egg nog, 1 c. | Milk toast, 1 slice and $\frac{1}{2}$ c. milk | Cornflakes, 1 c. |
| | Baked apple, 1 | Top milk, $\frac{1}{2}$ c. |
| | Cocoa (milk), $\frac{1}{2}$ c. | Baked apple, 1 large |
| | | Scrambled eggs, creamed, 1 egg and $\frac{1}{2}$ c. sauce |
| | | Toast, 2 slices |
| | | Butter, 1 pat |
| | | Cocoa (milk), $\frac{1}{2}$ c. |
| 9.45 a.m. | Egg nog, 1 c. | |
| 11.00 a.m. Cream tomato soup, $\frac{1}{2}$ c. | | |
| 12.45 p.m. | Roast chicken—small piece—breast | Roast chicken, 1 large piece |
| | Jelly, 1 T. | Jelly, 2 T. |
| | Mashed squash, $\frac{1}{2}$ c. | Mashed squash, 1 c. |
| | Buttered toast, 1 slice | Celery, 3 pieces |
| | Cornstarch pudding, $\frac{1}{2}$ c. | Bread, 2 slices |
| | Top milk, $\frac{1}{2}$ c. | Butter, 1 pat |
| | | Cornstarch pudding, $\frac{1}{2}$ c. |
| | | Top milk, $\frac{1}{2}$ c. |
| 2.00 p.m. Cocoa, 1 c. | | |
| 2.45 p.m. | | |
| 5.00 p.m. Milk chicken broth, 1 c. | Milk chicken broth, 1 c. | |
| | | |
| | | 27 men (emergency) 31 men (infirmary) |
| 5.30 p.m. | Stewed corn, $\frac{1}{2}$ c. | Stewed corn, $\frac{1}{2}$ c. |
| | Baked potato, 1 small | Baked potato, 1 medium |
| | Buttered toast, 1 slice | Wilted lettuce and egg, $\frac{1}{2}$ c. |
| | Butter, 1 pat | and lemon salad dressing |
| | Apple tapioca, $\frac{1}{2}$ c. | Bread, 1 $\frac{1}{2}$ slice |
| | Lemon sauce, $\frac{1}{2}$ c. | Butter, 1 pat |
| | | Apple tapioca, $\frac{1}{2}$ c. |
| | | Lemon sauce, $\frac{1}{2}$ c. |
| 8.00 p.m. Egg nog, 1 c. | | |
| 11.00 p.m. Milk, 1 c. | | |

Typical menu for attendants and nurses

| <i>Breakfast</i> | <i>Supper</i> |
|-----------------------------|----------------------|
| Stewed prunes | Meat stew |
| Cornflakes, milk | Swiss chard with egg |
| Scrambled eggs | Bread, butter |
| Creamed potatoes | Apple sauce, cake |
| Muffins, butter | Milk cocoa |
| Coffee | |
| <i>Dinner</i> | <i>Midnight meal</i> |
| Baked halibut, tomato sauce | Cold sliced meat |
| Mashed potatoes | Baked squash |
| Buttered peas | Bread, butter |
| Bread, butter | Chocolate tapioca |
| Pumpkin custard | Coffee |
| Tea | |

The menu for the day, with the number of men in each group and in each hospital, was posted on the wall in the larger of the two laboratories where the food for the sick was prepared; the menu for the attendants and nurses and the number in the day and night shifts, in the laboratory where this food was prepared; and in each case the amount required for each individual was indicated. Each girl thus had before her the data from which to calculate the entire quantity of a given food to whose preparation she was assigned.

The three members of the foods staff planned the menus for patients, attendants, and nurses, and divided among themselves the work of supervision. One, responsible for the attendants and nurses meals, so arranged the work that, though she shared in the preparation of breakfast, she was able to rest for a time in the afternoon and again be on duty for the evening meals. A second supervisor came for the preparation of breakfast for the sick, and remained through the noon meal; the third came on duty in the "invalid diet" kitchen shortly before noon, and remained until the K. P.'s had washed the supper dishes. The girls reported for duty at such hours as divided the corps into two shifts whose time overlapped in the middle of the day when the work was heaviest. Those who left home at 5.15 or 5.45 a.m. left the kitchen early in the afternoon, at the end of an eight or a nine hour day; while those who came at 9.00 or 10.00 a.m. remained until supper had been taken. The early-comers who lived in the town, a mile or two from the campus, were brought in the college automobile to the Woman's Building, each morning. We credit the faithful and punctual chauffeur of this car with a goodly portion of the smooth running of the kitchen.

The personnel of the corps varied but little. It included seven of the members of the home economics staff, three extension workers, ten city school teachers, four housewives, and five home economics seniors. Two of the corps, other than the home economics staff, were trained home economics graduates and were paid accordingly; all the rest received merely working-women's wages. What effect and how great this pay had upon constancy and efficiency in work it would indeed be difficult to say, but the absolute harmony, happiness, and coöperation at all times among the workers was plainly evident, and the devotion to such details as ordinarily are uninviting and uninteresting was one of the flattering and inspiring features of the success of the whole undertaking. No one ever tired of her job!

As each helper came on duty, she was given a slip of paper on which was noted the food preparation and packing for which she would be wholly responsible, or share with one or more others who were named on her slip. To illustrate:

Potter

Top milk for cereal.
Finish cereal.
Help Batt toast.
Roast—carve—with Nelson.
Help Daniels butter carrots.
Start oats for breakfast.
Wash dishes.

Batt

Pack dishes for breakfast.
Serve breakfast in infirmary.
Make cocoa.
Toast—with Potter.
Soft cooked eggs.
Baked custard—with Young.
Help Nelson—plain cake.
Soak prunes—6 per man.

The Foods Department feels fully justified in taking considerable pride in the fact that meals were ready on the stated minute, with military precision. All through the sixty-one days the diet kitchen was open the girls estimated with remarkable accuracy the time necessary for preparing the dishes for which they were responsible, so that the food did not suffer by undue standing after it was once ready.

All the food was transported on one of the army trucks manned by a detail of S. A. T. C. men under the supervision of a sergeant. The food was packed in suitable containers, covered, and labeled. For example: Tomato soup for No. 3 patients, 1 c. per man; Toast for No. 2's, 1 slice each; for No. 3's, 2 slices each. Chocolate malted milk for No. 1's, $\frac{1}{2}$ c. each. Coffee for nurses, 2 cups each. Meat for attendants,

2 pieces each. Custard for Infirmary, 1 mold each. Hot preparations were packed in double boilers or in heavy walled utensils. Dishes upon which hot food was to be served were heated before packing in big dish pans, and covered well with wrapping paper. Members of the truck detail held in hand during transit those utensils in which was material likely to splash out, as an urn of cocoa, or a pitcher of milk. All other containers when loaded on to the truck were covered over with a clean canvas which further protected them from dirt and cold. The truck called at the Woman's Building for food for patients in both hospitals, at the following hours: 7.45 a.m. breakfast, 12.45 p.m. dinner, 5.30 p.m. supper; and for feedings for No. 1's at 8.00 p.m., 11.00 p.m., and 5.00 a.m. Additional calls were made between breakfast and dinner, and dinner and supper for the extra feedings to be given patients on liquid and soft diet. Meals for attendants and nurses left the Woman's Building at 6.15 a.m. breakfast, 11.45 a.m. dinner, 6.15 p.m. supper and midnight meal. This fourth meal was sent prepared as far as possible, though usually one or more dishes were merely made ready for the assistants to finish so their food could be hot.

The food arriving at the hospitals ten to twenty minutes after it left the Woman's Building was in excellent condition as regards temperature. The truck stopped first at the infirmary, where was unloaded the food for the patients and attendants there. One or two members of the diet kitchen corps went at every meal to this hospital to serve the food on the trays. The two or three sergeants, attendants here, carried the trays to the patients in their ward. Later they gathered up the trays and packed the dishes ready for the truck to return them to the Woman's Building. In the emergency hospital the serving was done by some of the soldier attendants and carried to the patients by others. Attendants here gathered up the dishes after each meal, put them through disinfectant solution, and packed them ready for return on the truck. Dishes to be washed reached the foods laboratory from one and one-half to two and one-half hours after each meal had been sent. In the laboratories where the food for the sick was prepared the dishes were washed, scalded, and dried by the diet kitchen girls after breakfast and dinner; but after the evening meal, and after all three meals in the laboratory preparing attendants and nurses' food, the dish washing was done by "K. P.'s." The work of supervising the latter was lightened by special provision made by the Mess Officer, allowing a given detail of men to remain on duty for one week, rather than one day as is the usual rule

for "K. P." work. Obviously those S. A. T. C. men who were never sent for "K. P." work in the Woman's Building lost the special training in the art of scientific dish washing under the supervision of the Foods Department Staff. Seriously, by the end of each week, no "K. P." group showed evidence that it regarded the work as irksome.

Figures in part indicate the magnitude of the venture. The number of meals served calculated from the daily records kept are as follows: To patients—October, 2482; November, 5369; December, 992 (includes attendants and nurses); total, 8843. To attendants and nurses—October, 1316; November, 3095; total, 4411. To kitchen help and supervisors (noon meals)—October and November, 703; December 124; total 827. Grand total, 14,081.

The food supplies for the diet kitchen were furnished in part from the Commissary Department. The Mess Hall kitchen sent to the Woman's Building daily the number of loaves of bread needed. It also furnished as needed, such materials as cocoa, coffee, cornflakes, macaroni, potatoes, beans, oleo, flour, dried fruit, canned beans, corn, and salmon. The Mutual and Relief Societies sent in 150 quarts of canned fruit and twenty quarts of jam and jelly. Other supplies, as fresh fruits, sugar, canned milk, fresh eggs, fresh vegetables, crackers, meat, cheese, butter, and milk were procured from the local wholesale house, grocer, butcher, or dairyman. The total expenditure for food supplies, including the estimated cost of the donated fruit, was \$2011.01. This makes the average cost per day \$32.967 for supplies only; the cost per man per day, \$0.428 for supplies only. Including pay roll the diet kitchen expenditures amounted to \$2799.35, making an average total cost per day of \$45.896; and the total cost per man per day, \$0.596. We consider these figures reasonable, if not actually low, when we take into account the fact that the sick had: Every meal—fruit, fresh, canned, dried or preserved; milk, (No. 1, and No. 2 patients one quart per man, per day. No. 3, patients, one quart after the number of patients was diminished); butter, on the tray; oleo, used for seasoning and cooking. Every day—meat, once or twice (chicken twice each week); fresh eggs, once to three times, each man receiving one to two and one-half eggs; cereal, cooked in $\frac{1}{2}$ to all milk, if cooked; fresh vegetable, at least once.

The supervisors found that the diet kitchen furnished a very practical problem in dietetics. With the actual work of cooking, washing dishes, ordering supplies and supervising, they were able to weigh a sufficient number of food preparations so that the nutritive value of the meals

could be calculated in terms of protein and calories. These figures must be as accurate as those worked out in typical dietetics classes, and as can be expected outside of the strictly experimental laboratory. The calculations made for eight days, five of which were consecutive and the other three each typical, show that each man receiving a No. 3 diet, consumed, on the average daily:

| | <i>Protein grams</i> | <i>Calories</i> |
|----------------|--------------------------|-----------------|
| Breakfast..... | 27 | 746 |
| Dinner..... | 39 | 904 |
| Supper..... | 31 | 948 |
| Total..... | 97 | 2598 |

The following statistics were volunteered by the sergeant attendants in the infirmary. All gained in weight. Sergeant A gained twenty pounds in the first two of six weeks, and held the gain. His gain was made on the quantity of food served to one patient. Sergeant B, within the six weeks, gained twenty-nine pounds. Sergeant C, in four weeks, gained twenty-seven pounds. In view of the amount of protein and number of calories in the daily average diet, and the presence of liberal quantities of milk, eggs, and fresh vegetables, the food served to the sick must surely be regarded as "adequate."

The physicians in charge were most kind and generous in their expressions of approval of the food prepared for the patients, and they attribute to it a share in the fine record that the Agricultural College of Utah made in handling the "Flu" situation. It is a point of not a little comment, that not a member of the diet kitchen corps was a "Flu" victim.

The days of conservation were still with us, and great care was taken in the diet kitchen, both to prevent waste and to make the best utilization of all materials. For illustration, when preparing stewed apples or sauce the parings were cooked and the resulting juice used for making a pudding sauce, or else the cooked material was pressed through a sieve making very fine and smooth sauce. Chicken proved to be our cheapest meat, since by a generous purchase we were able to serve pieces of chicken at one meal, and for a second use the meat of the bony pieces for patties, or creaming, or in thick soup. After the meat was scraped from the bones they were again stewed, and considerable additional flavor was procured if not much nutritive substance. Portions of cereal left were utilized in custards and simple puddings. There was no difficulty in disposing of bread scraps in pudding, or crumbs for baked dishes. Small

amounts of fruits went into the make up of puddings, souffles, or gelatin desserts. The soup kettle swallowed up many a small portion of vegetable or meat. Mashed potatoes made a second appearance in potato puff, and plain boiled or baked potatoes formed the top of cottage pie, or perhaps were riced or scalloped. The outer leaves of lettuce were wilted while the inner more tender ones were served in crisp salad. Perhaps it should be mentioned that the left overs, used as indicated, were never those from food that had once been sent to the emergency hospital.

Because one, two, or all four of the other home economics staff members were on duty with the foods instructors throughout the time the diet kitchen was operating, and for a portion of that time one or two members of the Extension Department were also helping, there was afforded an opportunity unequaled, in any other probable circumstance, for the foods staff, two of whose members are new-comers this year, to become acquainted with their co-workers.

Further human interest and recreation, approaching that demanded by the human play spirit, we found in the suggestions inherent in the red letter days of the calendar. On Hallowe'en, our menu for No. 2's and 3's included a few pieces of plain fondant, chocolate dipped, and set upon each tray in a wee cup all bedecorated with seasonable cats and pumpkins and witches. The truck detail and "K. P.'s" were given ginger bread and coffee with real cream, and fruit salad in apple cups into which had been carved grotesque faces. Their eating in our department dining room must have been a treat after the regular Mess Hall arrangement. On Thanksgiving we had not only roast turkey and cranberry sauce for the actual *pièce-de-résistance* at noon, but also, on the supper trays were three or four pieces of home made candy and stuffed dates. The girls in the kitchen made good sport of the candy making. On this date the "K. P.'s" and truck detail were served, again in our dining room, with one crust raisin pie smothered with whipped cream, and hot milk cocoa. As Christmas with demobilization days approached hand in hand, we prepared pounds of home made candy and packed into gay boxes these sweets for our soldier boys.

Considering the diet kitchen venture as presenting a problem, interesting, practical, and professional, and an opportunity to be of actual service to our men in uniform and therefore to our nation, and appreciating that it opened a field for happy comradeship in work, we who were an intimate part of that venture look upon it as a priceless experience.

A NEW PROGRAM FOR THE PROMOTION OF HOME ECONOMICS IN THE SCHOOLS

EDNA N. WHITE

President of the American Home Economics Association

The Smith-Hughes Act has opened the way for remarkable development in vocational education in this country. There are, however, certain limitations which this law has imposed upon vocational home economics due to the fact that, in the act, home economics is included in that section which sets up the standard for trade and industrial education.

To remedy this difficulty and to provide adequate funds for home economics education, a bill, entitled "A Bill to Provide for Coöperation with the States in the Promotion of Vocational Education in Home Economics and to Appropriate Money and Regulate Its Expenditure," is to be introduced into Congress, and it should have the active support of every member of the Home Economics Association and of every reader of the JOURNAL. This bill will be a substitute for that portion of the Smith-Hughes Act which relates to home economics. It will provide for an interpretation of vocational home economics along the broad lines outlined below, so that the large groups of girls and women who need instruction may be reached by homemaking classes in day, part-time, and evening schools. This bill further includes an appropriation which will provide for home economics the same amount of Federal aid as is provided for agricultural education and trade and industrial education.

The Vocational Education Act recognizes homemaking as a vocation, comparable with industrial or agricultural pursuits, and vocational home economics is designed to train girls and women for work in their own homes as house daughters or as homemakers as well as for employment in the homemaking occupations. Yet the fact that home economics is included in that section of the bill which deals with trade and industry has caused some misunderstanding, especially since to many vocational education has meant only training for industry or for a wage earning occupation outside of the home.

Education in homemaking is the most far reaching of any of the forms of vocational education. There are about twenty million homes in the United States furnishing an occupation into which more workers

go than into any other single trade or profession; yet only an infinitesimal portion of those engaged in it have any training for it. According to the census of 1910, there are in the United States more than forty-four million girls and women. Of these, about eighty per cent will marry and homemaking will become their chief occupation. The large majority of girls and women are responsible in one way or another for some part in the home activities, either as managers and workers in their own homes or as members of a household with a share in its duties. The average girl of over 14 needs training in the work of the home and the larger social and economic principles of family life; for, either as an independent worker in industrial lines or as a member of a family, some share in the life of the home or in the management of the income is hers.

There are three large groups of girls and women to be reached by homemaking training, and to be effective, vocational education must be planned to meet the best interests of all these women.

These groups are, roughly, the girls of 14 to 16 who are in school, the girls of over 14 who have dropped out of school, and the older women most of whom are at work in their own homes.

To reach all of these with the homemaking training which will best fit their needs, courses must be offered in day, part-time, and evening schools.

The greater number of girls who are now being reached through the schools are the few who elect some home economics in the day schools. There are many more girls who would be interested and would be held in school longer if the right kind of home economics courses were planned for them. For most of these girls the four-year high school course, with an adequate amount of home economics and related science and arts, is the one which will best fit them for their later home-making responsibilities. There are, however, groups of girls in school who will soon drop out from one cause or another, and these girls should be given a shorter, more intensive course in homemaking.

Among the girls who are out of school and who should be given some part-time courses in homemaking, we find those who have dropped out because they were not interested in regular school work or because they were needed to help with the home duties, and the large group of girls who have gone to work as soon as working papers could be secured. With the passage of compulsory part-time education laws, more and more of these girls will come back to school for from four

to six hours of instruction a week. For most of these, homemaking training should form a part of the course; for some of these girls who are either at work in the home, or who desire training for occupations closely connected with the home, at least half time should be devoted to such training.

The groups of older girls and women who should be reached through evening schools are made up of women who are at work in their own homes and who need help in their immediate problems; women who are at work outside of the home and yet who either have homemaking duties or who expect soon to assume them; and women who desire training for work as household assistants or training in some other occupation in the field of home economics. For all of these groups short unit courses, organized as a definite part of the public school system, are needed. These courses are not meant to take the place of the extension work which is doing such effective service—the one is a supplement to the other. Extension work awakens an interest, broadens the vision and stimulates a desire on the part of the women for a better understanding of their work. Both types of instruction are needed if we are to begin to reach all of the women who wish and who deserve a chance for help in their daily problems.

To briefly classify the groups who should be reached by classes in the schools, we find that the short unit courses (afternoon and evening classes) should be designed to meet the needs of:

Groups of homemakers at the time they urgently need help to solve their home problems.

Groups of women who are at work in occupations outside of the home, yet who expect soon to become homemakers and who should be given the opportunity for homemaking education.

Groups of women who are in occupations outside of the home yet who have some home duties and wish homemaking training to enable them to better perform their household tasks or to improve their living conditions.

Groups of women who are employed or who desire employment as helpers in some capacity within the home and who desire training which will enable them to more efficiently perform their services and to demand a better wage.

Part-time schools or classes should reach girls of:

Fourteen years of age on whom a large responsibility for the work of the home unfortunately rests, due to the loss or ill health of the

mother, or due to financial conditions which make it essential for the mother to earn a living outside of the home.

Girls at work in factories, or stores, who are released for a certain number of hours per week for instruction.

Girls employed in the homes as household assistants who should be released for part-time instruction in homemaking.

Groups of girls who desire training as household assistants, or for other occupations in the field of home economics.

A large number of girls who have left school because they are not interested in day school work. Many of these may be reached by the type of part-time instruction designed to interest them and to meet their needs as house daughters and as future homemakers.

The work given in day schools should be planned to reach three large groups of girls:

Those who have dropped out of school because the type of instruction did not interest them due to its failure to touch the immediate needs of their daily life. Such girls may frequently be persuaded to come back for the course which is designed to hold their interests and to meet their needs.

Girls of over 14 years of age who are in school but who are not interested in the ordinary academic work. They are over-age girls, slightly backward girls, or girls who never expect to go further in their education. Many of these girls could be interested and would develop further, if given the right type of homemaking education.

Average high school girls, many of whom will make up our community leaders among women. These girls should be reached by the right type of homemaking instruction which will not only make them better wives and mothers but will enable them to play a larger part in the social and civic life of the community.

As has been stated above, the administration of the Vocational Education Act as it relates to home economics has been difficult in many of the states due to the fact that home economics is included in that section of the law which sets up the standards for the trade and industrial schools and classes, and thus subjects home economics education to the same rulings as trade and industrial education.

For the group of girls who will remain in school for only a short time and who need short intensive courses in homemaking, courses in the day school have been well worked out in accordance with the standards set for the day trade and industrial school. However, this type

of school does not meet the needs of the average high school girl, because the conditions established for the trade and industrial schools are based upon the assumption that the average pupil has had no previous direct contact with the occupation which she is preparing to enter. This is not true in the case of girls preparing for the homemaking occupation, for practically all girls have had contact with some phases of homemaking and in a large number of cases have had a share in the duties of the home.

It must further be remembered that homemaking is a composite of many differentiated occupations requiring various forms of related knowledge. Under ordinary circumstances the efficient homemaker must be a reasonably skilled worker in four or five semi-skilled occupations. In addition she is usually joint owner and manager of the whole enterprise. The efficient homemaker must be a skilled worker in general housekeeping, in the preparation and serving of food, the care and rearing of children, the care of the health of the family, the care and repair of the clothing of the family, and the promoter of the public health of the community. As a joint manager, the homemaker is largely responsible for the character of her enterprise, the standard of living, and the quality of the product of the home,—the child. She is a purchasing agent, a partner in the business, and usually the business manager. As superintendent of the plant, she plans her own work, that of the members of the family, and the work of the employees, if she has them. She is the educational director, health and welfare manager, and the social head of the family group. Homemaking, then, cannot be compared to a unit trade and the training which is necessary for the development of a homemaker cannot be held to the same conditions as those set up for training in a trade.

Such a program for the promotion of home economics cannot be carried on without adequate funds. With the small amount which is available for home economics under the Smith-Hughes Act good work has been accomplished, but under that act home economics will have difficulty in developing as rapidly and efficiently as agriculture and trade and industry. Homemaking will never be recognized as a real vocation for a large group of the American people unless a definite amount of money is appropriated for this great work. There are no funds appropriated in the Vocational Education Act for the salaries of teachers and supervisors of home economics. The Smith-Hughes Act provides that a maximum of 20 per cent of the funds available for

the salaries of teachers of trade and industry may be used for home economics, but it is left entirely to the state boards as to whether they will use this amount for homemaking instruction or use it all for the establishment of trade and industrial schools and classes. Further, the appropriation to the states for the salaries of teachers of trade and industry are apportioned on the basis of the urban population of the state. This works a great hardship in the case of homemaking training, for 31 of our states have a rural population larger than their urban population. Trades and industrial pursuits are carried on in the cities, but homemaking is an occupation that is carried on by all of our people and the appropriation to the states should be on the basis of their total population rather than on their urban population.

New legislation is needed to make adequate provision for a program of home economics education which provides for the establishment of courses of instruction in day, part-time, and evening classes. Such courses must be thoroughly practical so that the instruction will function in the home and at the same time must give the homemaker a vision of the larger aspects of homemaking in relation to community needs and responsibilities.

To summarize, the essential points to be included in any form of new legislation are:

1. Provision for a broad interpretation of "the half-day of practical work on a useful or productive basis." Provision must be made to reach the groups of women who are employed in their own homes; the groups of younger girls who are employed either at home or in occupations outside of the home and who should be required to have some homemaking training; and the group of girls who are in school. This will require a broad phrasing so as to provide both the type of instruction needed and adequate time for such instruction.

2. The appropriation of a definite sum to be spent for the salaries of teachers and supervisors of home economics education.

3. The allotment of the appropriation for the salaries of the teachers of home economics to the states in the proportion which their total population bears to the total population of the United States.

4. The appropriation of moneys for the administration of home economics education, which is at present not being adequately provided for.

5. The provision that states which have already accepted the provisions of the Vocational Education Act, and have appointed the Treas-

urer custodian of funds, automatically accept the new provisions for home economics education.

The Council of the American Home Economics Association heartily endorses the spirit and purpose of this bill and urges you as a member of the Association, or as one interested in the welfare and larger development of the homes of this country, to write to your congressmen and senators asking them to consider this bill and to vote favorably on the measure.

The text of a tentative bill submitted to the Chairmen of the Committees on Education and Labor in the Senate and House follows.

A BILL TO PROVIDE FOR COÖPERATION WITH THE STATES IN THE PROMOTION OF VOCATIONAL EDUCATION IN HOME ECONOMICS AND TO APPROPRIATE MONEY AND REGULATE ITS EXPENDITURE

BE IT ENACTED BY THE SENATE AND HOUSE OF REPRESENTATIVES OF THE UNITED STATES OF AMERICA IN CONGRESS ASSEMBLED:

That there is hereby annually appropriated out of any money in the Treasury, not otherwise appropriated, the sums provided in Section 2, of this act to be paid to the respective states for the purpose of coöperating with the states in paying the salaries of teachers, supervisors, and directors of home economics subjects, and the sum provided in Section 3 for the use of the Federal Board for Vocational Education for the administration of this act and for the purpose of making studies, investigations, and reports to aid in the organization and conduct of vocational home economics education, which sums shall be expended as hereinafter provided.

SECTION 2. That for the purpose of coöperating with the states in paying the salaries of teachers, supervisors, or directors of home economics subjects, there is hereby appropriated for the use of the states, subject to the provisions of this act, for the fiscal year ending June 30, 1920, the sum of \$500,000 and annually thereafter for nine years an amount for each year equal to the amount appropriated for the year preceding increased by \$250,000, and for the fiscal year ending June 30, 1930, and annually thereafter the sum of \$3,000,000; such appropriations to be paid to the states in the same manner and upon the same terms and conditions, except as hereinafter provided, as the funds now provided by the Vocational Education Act, approved February 23, 1917, for coöperation with the states in the payment of the salaries of teachers of home economics subjects, and to be in lieu of said funds; the acceptance of any state of the benefits of said Vocational Education Act being deemed an acceptance of the benefits of this Act and

entitling such state, upon compliance with the terms and conditions contained in this act and in said Vocational Education Act, to its allotment of the appropriations as herein provided. That the appropriations hereby made shall be allotted to the states in the proportion which their population bears to the total population of the United States, not including outlying possessions, according to the preceding United States census, providing that the allotment of funds to any state shall be not less than a minimum of \$5,000 for any fiscal year prior to and including the fiscal year ending June 30, 1925, nor less than \$10,000 for any fiscal year thereafter. And there is hereby annually appropriated the sum of \$50,000 or so much thereof as may be necessary, which shall be used for the purpose of providing the minimum allotment to the states provided for in this Section.

SECTION 3. That there is hereby appropriated to the Federal Board for Vocational Education the sum of \$75,000 annually for the purpose of making, or coöperating in making, studies, investigations, and reports to aid in the organization and conduct of vocational home economics education and for administrative expenses incident to performing the duties imposed by this act and the Vocational Education Act insofar as the same relates to vocational home economics education, including salaries of such employees in the District of Columbia or elsewhere as the Board may deem necessary, actual traveling and other necessary expenses incurred by the members of the Board and by its employees under its orders, including attendance at meetings of educational associations and other organizations, rent and equipment of quarters in the District of Columbia and elsewhere, purchase of books of reference, law books, and periodicals, stationery, typewriters and exchange thereof, miscellaneous supplies, postage on foreign mail, and all other necessary expenses.

SECTION 4. That in order for any state to secure the benefits of the appropriations provided by Section 2 of this act, the State Board for Vocational Education of the state, created or designated in accordance with the provisions of the Vocational Education Act, shall prepare plans showing the kinds of home economics education for which it is proposed that the appropriation shall be used; such plans shall be submitted by the State Board to the Federal Board for Vocational Education and if the Federal Board finds the same to be in conformity with the provisions and purposes of the Vocational Education Act and this act, the same shall be approved; that any state may use the appropriations or any part thereof allotted to it under the provisions of this act for the salaries of teachers of home economics subjects in schools or classes or for the salaries of supervisors or directors of such subjects under a plan of supervision for the state to be set up by the State Board with the approval of the Federal Board for Vocational Education; that in order to receive the benefits of the appropriations of this act the State Board of any state shall provide in its plan for home econom-

ics education that such education shall be that which is under public supervision or control; that the controlling purpose of such education shall be to fit for useful employment in the home or other occupation in the field of home economics; that such education shall be of less than college grade and be designed to meet the needs of persons over fourteen years of age who have entered upon or are perparing to enter upon the work of the home or other occupation in the field of home economics; that not more than one-third of the sum appropriated to any state under this act shall be expended for the salaries of teachers in schools or classes for those who have not entered upon employment, and that the teachers, supervisors, and directors shall have at least the minimum qualifications for teachers, supervisors, or directors determined upon by the State Board with the approval of the Federal Board for Vocational Education. The provisions of this section shall be in lieu of the provisions of Section 11 of the Vocational Education Act in so far as the same relate to home economics.

It is interesting to know that one-third of the American soldier's rations (34.1 per cent) consisted of flour, 28.2 per cent of meat, 8.3 per cent coffee, 7.3 per cent vegetables, 6.8 per cent beans, 3.7 per cent sugar, 2.5 per cent milk, 1.7 per cent fruits. These figures are taken from records of food shipped from this country—our soldiers also ate fresh vegetables and fruits purchased in France.—*Where the War Money Went. Treasury Department, War Loan Organization.*

EDITORIAL

Wages and the Cost of Living. There has gone abroad a widespread opinion that wage earners in spite of the high cost of living are better off than they have been for a long time because of the great increase in wages paid. It is worth while to study the résumé of a brief study into the wages of women and the cost of living in New York City and Brooklyn, made by the Consumers' League of New York¹ in the fall of 1918. Comparing this with the report of the Committee on Home Economics of the New York Charity Organization Society,² one finds that the increase of wages for women wage earners is less than for families, yet of the families studied only 40 per cent had increased their income, 40 per cent had no increase, and 20 per cent had an actual decrease. It is to be remembered that this is a study of a small though fairly typical group. Probably we shall never be able to obtain exact figures in regard to all wage earners. Of individual workers only 31 per cent had increased, 57 per cent had had no increase and 12 per cent had decreased.

There are approximately 200,000 women breadwinners boarding in New York City. In their brief study the Consumers' League found 3,016 girls receiving less than \$12.00 a week. Of these, 45 per cent were earning less than \$10.00 a week, 30 per cent less than \$9.00, and 4 per cent less than \$8.00. These girls were not beginners; 66 per cent had worked more than a year, 11 per cent had worked five years and over; 41 per cent were graduates of the elementary schools, and 29 per cent had been high school students.

In 1914 the official minimum weekly budget for a working woman in New York State was \$9.00. This was determined by the New York State Factory Investigating Commission. Applying to this increased retail prices, as reported by the Bureau of Labor Statistics and others, the League finds that \$15.00 is a minimum upon which a wage earning

¹ *Is This Living?* Consumers' League of New York City, 105 E. 22 St., New York City, January, 1919.

² "My Money Won't Reach" Committee on Home Economics, Charity Organization Society, 105 E. 22 St., New York City, April, 1918.

girl can obtain decent shelter, proper clothing, and adequate food in New York City. This means an allowance of \$7.35 a week for room and board, including lunches; \$3.60 for clothing; while laundry, car fare dentist and doctor bills, and all other essentials must be taken care of for \$3.85. The report says: "These figures become even more astounding, in view of the fact that the press has led us to believe that everyone was receiving more-than-living wages, when we realize that the statistics were gathered at the high water mark of wages in 1918, from employment files where trained workers register." Figures show that between 1914 and November 1918 the cost of living in New York State increased 62 per cent, clothing for women went up 112 per cent, food 65 per cent, fuel and light 25 per cent, and incidentals 62 per cent. "Shoes are \$8.00 a pair not only to the girl who is receiving \$35.00 a week in the munitions factory,—they are \$8.00 to the clerk who is still receiving \$8.00 a week behind the counter." The Consumers' League found that \$3.00 a week was the minimum price at which a clean and respectable furnished room could be had. "For running water, or for a gas plate for cooking, one had, of course, to pay more. If one paid less than \$3 one had to choose either accommodations so dirty as to be uninhabitable, hall bedrooms over saloons, or skylight rooms with no windows." A study of the different types of restaurants showed that the same kind of lunch that cost 15 cents in 1914 cost 35 cents in 1918. Many of these girls are not only supporting themselves but helping toward the support of others—under what conditions it is difficult to realize.

Many of the girls are living in homes subsidized either by free rent or volunteer service, or outright money gifts. A few years ago the Consumers' League encountered some girls who were paid so poorly by a manufacturer that living in one of these cheaper homes was a necessity. Investigation revealed that this home was supported in large part by this same low wage-paying manufacturer. "Industries which pay women less than a living wage are not meeting their own fixed charges, for they are subsidized either by the family of the woman worker or by her friends or by public or private charity, or by the girl herself in slow starvation." Examples are given of interviews with 87 girls early in 1919, that show "as pitiful deprivation in a \$10 budget in 1919 as there used to be in a \$6 or \$7 budget in 1914." Of these 87 girls 17 were not only supporting themselves but helping support others. One mother of 24 took care of her 9 months old baby and herself

on \$8 a week. "An aristocratic, whitehaired woman of 60 years," New England by birth, was never able to afford any lunch. "At the Home, where she lived six years, she is treated very kindly, and they 'carry her along' when she is 'up against it.' Asked about the doctor's bill, she said the doctor refused to take even a little, and bit her thin lips, as she said, 'But that's not respectable!'"

The ill paid girl finds it almost impossible to provide for any recreation. This is to her as important a need as that for the bare necessities of life, and its absence "plays a large part in the break-down of the moral stamina of young girls. It is the ill-paid worker, more than any one else, who needs recreation to break the monotony of her drab existence. And as one old-young girl sadly remarked: 'It's easy enough to get some one to help you along here in New York.' In this tendency to break down the moral reserve, lies one of the greatest dangers of the less-than-a-living wage."

It is time that all of us waked up to the fact that the high wages of which we hear so much are very much in the minority, and that a large portion of women workers in our big cities are still undertaking to live for less than is possible if any adequate standard is applied.

COMMENT AND DISCUSSION

I should like to see discussed, in the columns of the JOURNAL, the question of basement laboratories. These are often dark and unsanitary and the environment even in well lighted ones reacts upon both pupils and teachers.

During these reconstruction days new schools are going to be built, and architects and some Boards of Education still feel that the basement is the only place for the Household Arts Department of the school.

A new school is being planned in our city. I suggested to the architect that my work be put on the top floor. He was very indignant and said, "There is nothing else to put in the basement—you cannot put a class room down there."

We have condemned basement bakeries and kitchens; cannot we do the same with basement laboratories?

LOUISE T. MONTGOMERY.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Home and Community Hygiene. By JEAN BROADHURST. Philadelphia: J. B. Lippincott Company 1918, pp. 428. \$2.00. By mail of the Journal, \$2.15.

The developments in the public health movement are dependent upon progress in education. The establishment of a deeper understanding of the purposes and methods of securing personal and public health carries with it the opportunity for advancement upon which communal safety depends.

Students of home economics will find a vast amount of information, well arranged and excellently presented in this book by Miss Broadhurst, assistant Professor of Biology, Teachers College, Columbia University. The scope of the subject matter extends from the consideration of bacteria and other microorganisms to health administration. The ordinary problems of sanitation are supplemented by modern discussions of hygiene as applied to institutions such as homes, schools, and industry. The underlying bases for the prevention of disease are reinforced by a careful exposition of the methods of infant welfare, the problems of middle age, tuberculosis, mental and military hygiene.

The simplicity of the volume commends it, not merely to nurses, teachers, and mothers, to whom the book is dedicated, but to all who are interested in the methods of teaching the fundamental principles of personal hygiene and public sanitation, together with their ramifications in social and economic fields.

The presentation of a few problems at the end of each chapter adds distinctly to the pedagogical value of the book, which is also

enhanced by a glossary and a few selected references constituting the appendix.

Paper, type, and illustrations combine to add to the readability of the volume and to insure its popularity. The author has been successful in creating a textbook giving the gist of the health conservation movement, without sacrificing force or clarity through abuse of technical terms. Simplicity and accuracy, with brevity and lucidity, unite in making this authoritative manual most valuable for general use by those seeking to impart or absorb a general understanding of the relation of individuals or environment to the entire public health problem.

IRA S. WILE, M.D.

Dietetics for Nurses. By FAIRFAX T. PROUDFIT. New York: The Macmillan Company, 1918, pp. 444. \$2.25. By mail of the Journal, \$2.40.

Many teachers of dietetics have been unable to place in the hands of their pupil nurses a book adequate to their needs. Miss Proudfit out of her practical experience in Memphis hospitals, has written a textbook that comes very close to that need.

If, however, the nurses come to the book with no previous knowledge of chemistry, bacteriology, or foods, they will find the first section somewhat difficult to understand. The subject matter is good, drawn from authentic sources, and well presented. Recipes with total calories (but not protein calories) sample menus, and special diets that will please the nurse are run through the pages. The tables are valuable and for the most part cover the ground. In the one showing the chemical combinations and sources, con-

fusion will arise from so grouping the mineral salts as to make it appear as though nitrogen and phosphorus were the only ones, and as though iron, calcium, and the others belonged to another class.

The book is divided into three sections: 1. Food and its significance—"a comprehensive study of the sources of food, its composition and nutritive value." 2. The human machine and its relation to food—"the effect of food in the body under normal conditions." 3. Nutrition in disease—"The effect and behavior of food when conditions are not normal."

A chapter on urinalysis is inserted and is a well-advised departure. The matter of care and feeding during motherhood is given adequate space. There is no special distinction between dietetics and nutrition, but those terms have not yet been standardized. Altogether, the nurse really interested will be glad to have this addition to her library.

ALICE CLORINDA WALTON.

Lessons in Cookery: Food Economy. By FRANCES ELIZABETH STEWART. Chicago and New York: Rand McNally & Co., 1918, pp. 250. \$1.25. By mail of the Journal, \$1.35.

This book is a distinctly original contribution to the growing list of home economics publications. It has undoubted value when considered as a cook book containing timely recipes and full suggestions for methods of combining ingredients, though these are so fully stated as to be almost confusing at times by their very detail. The summaries of the food principles and their functions in Part I, of the various methods of canning and preserving in Part II, of the wheat flour substitutes and of principles of marketing and budgeting in the Appendix save the use of a number of books or pamphlets.

Though, from her several years of experience in the teaching of home economics to high school girls, the author has had ample opportunity to try out various methods of teaching and to decide upon the one best suited to the needs of her students, the book

is less successful as a laboratory manual for high school students; yet, according to the preface, the book is primarily intended for this purpose.

The scheme of organization is not clear, though economy is, of course, the keynote of the entire volume. Presumably the well balanced meal is the "dietetic principle" involved in Part III, though by what standards a meal is to be judged as to its completeness is gained only by inference. It is suggested that the student calculate the total caloric value and protein caloric value in other recipes though no data for, or method of, such calculation is given. What purpose is served by the menus which are found at the head of each chapter is not explained.

It is stated also that the teacher will have an opportunity to develop the principles of cookery involved in the preparation of the typical food stuffs, but it would seem almost inevitable that these principles would be obscured by their almost constant use in combinations in dishes rather than as a unit by themselves.

Again reasons and principles involved in processes are not developed. It may be argued that this is a laboratory manual and that such material would be dealt with in supplementary discussion periods; but modern educational methods are opposed to the complete separation of theory and practice. The laboratory work should be for the purpose of illustrating the principles learned, and it would seem wise at least to allude to such principles in the text. Particularly would this be true if, as it is stated, the book is intended not only for students but also for housekeepers who have not the students' opportunity for supplementing the recipes.

It is also stated that "little, if any, preliminary training in general science or cookery" is presupposed. In that case much of the work would be beyond the grasp of freshman high school students or of the average housewife, without considerable supplementing. Highly technical terms are used in some places which it is doubtful if even the senior high school girl should be

expected to know, such as "proteoses," "food hormones," "nitrogen equilibrium," "alkaline ash."

As a compilation of facts and recipes the book has merit, but as a laboratory manual of home economics for high school girls it does not meet the requirements of modern educational ideals.

JOSEPHINE A. MARSHALL,
Teachers College, New York City.

Diet and Health with Key to the Calories.

By LULU HUNT PETERS, A.B., M.D.
Chicago: The Reilly and Britton Co.,
1918, pp. 105. \$1.00. By mail of the
Journal, \$1.10.

Through a very clever combination of witty paragraphs and amusing marginal drawings, the author and her "small nephew" (the illustrator) entice even the disinterested reader to follow their lead through nonsense to reason. After the "Preliminary Bout" there follow definitions and lists of 100-calorie portions of foods, and suggestions in regard to proper sleep and exercise.

The object of the book is to induce each person to first find out what his weight should be, and how many calories and what kind of food he requires; then, by choosing that diet and taking the proper sleep and exercise, to attain the desired result.

The book is a tonic rather than a text or reference, and should serve well the purpose of interesting those who either know nothing about proper diet, or refuse to follow the correct diet for themselves. It is not often that one finds scientific facts under such an attractive camouflage.

KETURAH E. BALDWIN.

Yarn and Cloth Making: an Economic Study.

By MARY LOIS KISSELL. New York:
The Macmillan Company, 1918, pp. 252.
\$1.60. By mail of the Journal, \$1.70.

The author has compiled an interesting analysis of the progress of invention affecting yarn and cloth making. Both subjects are presented in a consecutive study from

the simplest methods to those of the present time.

The book consists of organized data and facts arranged in outline form preceded by descriptive matter to which cross reference is made. Each type is developed according to "Distinctive Characteristics," "Outline," and "Economic Gain." It is well illustrated and supplemented with a detailed bibliography of reference and illustrative material.

The problems are practically solved, leaving but little to be gained through research, hence the advisability of its use as a college or normal school text seems questionable.

However, it will be invaluable for reference material for students of industrial arts and for teachers of industrial history and economics.

According to the introduction the book aims to cope with present conditions but the content fails to fulfill this assertion.

ETHELWYN DODSON,
Iowa State College.

*Department Store Merchandise Manuals: Millinery.*¹ By CHARLOTTE RANKIN AIKEN. New York: The Ronald Press, 1918, pp. 174. \$1.50.

The manual dealing with millinery is, aside from its value for salespeople, unusually good as reference material for high school or college classes in millinery. The chapters dealing with hat straw and straw braid, straw hat making, and felt hats are very clearly written, and deal with these subjects in an interesting and practical way. From the standpoint of selection, the chapters on trimmings and on choosing hats which are well designed, well proportioned, and becoming are very good. These chapters present the questions squarely and deal with them logically. Although written mainly for salesgirls, this book is interesting and valuable reading for students, and should help them to become more intelligent buyers.

MARGARET KINGERY,
Iowa State College, Ames.

¹ Reviews of other manuals appeared in the JOURNAL, May, 1918, and February, 1919.

PAMPHLETS RECEIVED

Issued by the Department of the Interior, Bureau of Education:

Community Buildings as Soldiers' Memorials. Henry E. Jackson. Community Center Circular No. 2, January, 1919.

The Coöperative School. William T. Bawden. Industrial Education Circular No. 2.

Home Education. Ellen C. Lombard. Bulletin, 1919, No. 3.

Issued by the Department of Labor, Children's Bureau:

Advising Children in Their Choice of Occupation and Supervising the Working Child. Children's Year Leaflet No. 10. Bureau Publication No. 53.

The Employment-Certificate System. Children's Year Leaflet No. 12. Bureau Publication No. 56.

Rural Children in Selected Counties of North Carolina. Frances Sage Bradley, M.D., and Margaretta A. Williamson. Rural Child Welfare Series No. 2, Bureau Publication No. 33.

Stay in School! A Message to the Boys and Girls of America. (Leaflet.)

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PERIODICAL LITERATURE

FOODS AND NUTRITION

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Auto-Intoxication. Walter C. Alvarez, *Jour. Amer. Med. Assn.* 72 (1919), p. 8. Origin of the So-called Auto-Intoxication Symptoms. A criticism of the prevalent views regarding the significance of intestinal toxemia, "auto-intoxication." Alvarez suggests other causes for the symptoms observed and insists that the popular notions concerning auto-intoxication have served as a "cloak for ignorance."

The Dietary Properties of the Potato. E. V. McCollum, N. Simmonds, H. T. Parsons, *Jour. Biol. Chem.*, 36 (1918), p. 197. After a review of the literature on this subject, the authors report the results of their work, using rats as the experimental animal and employing the same method they have used for three years in study of numerous other food stuffs. This method consists in feeding only the one natural food stuff under examination, supplementing it with single and multiple additions of purified food substances (inorganic salts, protein and fat soluble A.) Problem is taken up with relation to value of potato as food for young rats during growing period—other investigators having studied the problem by methods involving only maintenance of nitrogen equilibrium in adults. The metabolic problems involved in these two methods are discussed, together with method of feeding isolated proteins from natural food stuffs.

Influence of High Temperatures and Dilute Alkalies on the Antineuritic Properties of Foods. Amy L. Daniels and N. I. McClurg, *Jour. Biol. Chem.*, 37 (1919), p. 201. Foods used were cabbage and soy and navy beans. Work was planned so as to reproduce actual home cooking conditions as nearly as possible, as to temperature and alkali added. Cabbage and beans cooked in water at 100°C., cooked in water at 120°C., for 15 min. and cooked in boiling water to which a slight excess of alkali (sodium bicarbonate) has been added. They also tested water extract of beans cooked under similar conditions. Authors report results at variance with finding of McCollum and co-workers as regards effect of alkali. Young rats were the experimental animals used. Casein, salt mixture, lard, butter fat, corn starch, and filter paper were used to supplement the diet, so that only limiting factor was the water soluble vitamine.

MISCELLANEOUS

Influenza—Some Interesting though Unsuccessful Attempts to Transmit Influenza Experimentally. *Pub. Health Rept.*, 34: 33, Jan. 10, 1919. Attempts were made to transmit influenza to a large group of volunteers by a wide variety of methods such as by inoculations of cultures from secretions of air passages of patients; by supposedly infected sprays and swabs; by close association with patients coughing and sneezing; and by direct subcutaneous injections of filtered secretions and blood. Not one of the many volunteers developed influenza. The hypothesis is advanced that uncomplicated influenza may be infectious only in the earliest stages of the attack.

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Prevention of Simple Goitre. Second paper. Kimball and Marine. *Arch. Int. Med.* July 15, 1918. Favorable report of administration of two grams sodium iodide in 0.2 g. doses to younger grades of school children of Akron, O.; 0.4 g. doses to older grades. 26% those having a normal goitre and not taking iodide showed definite enlargement; one-third of those showing small goitres, disappeared; one-third of moderate goitres decreased 2 cm.; 0.5% developed iodide rash, which cleared up.

Pituitary Headaches. Pardee, *Arch. Int. Med.*, Feb. 15, 1918. Headache deep in forehead, behind eyes; a tightness, dazed, accentuated by excitement, stooping over, upon ingestion of sugar. Marked fatigue follows; comes during menses. Treatment, pituitary preparations.

TEXTILES AND CLOTHING

Stabilization of Cotton Reflected in New Goods Prices. *Dry Goods Economist*, Mar., 1919.

Conditions in Linen Field. *Dry Goods Economist*, Mar., 1919.

Clothing Abroad. *Textile World Jour.*, Apr. 5, 1919.

The Wisdom of Blue Serge. Miriam Grose Robins, *Vogue*, Apr. 15, 1919.

Woolen and Worsted Goods. *Fashion Review*, May, 1919.

Fabrics from Nettle and Hemp. *Textile World Jour.*, Mar. 1, 1919.

Suggestions for Selecting Curtains and Over Drapes. *Dry Goods Economist*, Mar. 15, 1919.

What's What in Linens of Today. Hanna Tachan, *Pictorial Review*, April 1919.

Luxury Tax. *Dry Goods Economist*, Apr. 5, 1919.

NEWS FROM THE FIELD

Institution Administration Round Table, Teachers College, Columbia University. A Round Table on Institution Administration arranged by Miss Emma H. Gunther brought together a large number of people interested in different phases of administrative work in institutions in the East. The varied types of work represented were a revelation to many. It was not the usual formal conference; instead short reports were presented, as shown on the program given below. The Round Table afforded the opportunity for the meeting of workers in the various fields and for the exchange of experiences.

A number of colleges offering courses in Institution Management were represented, including Pratt Institute, Simmons College, Cornell University, University of Wisconsin, Battle Creek, and the University of Chicago. A large number of colleges are responding to the demand for training in Institution Management, and are therefore asking for instructors and organizers of such departments.

At the opening meeting, on Friday, April 4, Dr. Bigelow extended a cordial welcome on behalf of Teachers College. In the evening, Professor Nutting brought a message of inspiration to all workers, pointing out that the activities in these institutions lay at the very root of human needs and that all should appreciate and understand the big essential things for which this work was created.

The Friday program was as follows:

Afternoon: Special Types of Administrative Work—Chairman, Helen Hollister, Pratt Institute. Cafeteria Management and Welfare Work for Employees—Mrs. Marion Shafer, National Bank of Commerce, New York City; What the Management of a Woman's Club Involves—Miss Eyre, New Century Club, Philadelphia, and Mildred Barber, Woman's City Club, Boston; Developments

in School Lunch Work—Daisy Treen, Director of High School Lunches, Boston; Newer Developments in My Work as a Hospital Dietitian—Charlotte Addison, Post Graduate Hospital, New York City; A Problem in Accounting—Leila Johnson, Instructor in Institution Accounts, Teachers College; Business of a Tea Room—Miss Freese, Colonial Tea Room, New York City; Administration of a Food Shop—Ella Emerson, Food Shop, Women's Educational and Industrial Union, Boston; Dormitory Management—Miss Tyler, Brooks Hall, Barnard College; A Field for Special Dietitians—Lulu Graves, President American Dietetic Association; Problems of Y. W. C. A. Cafeterias—Miss Tanner, Miss Williams, Miss Penrose. A paper summarizing work of the Dietary Survey carried on by the Office of Home Economics, States Relations Service, and the Bureau of Markets of the Department of Agriculture was offered by title by Elizabeth E. Koch.

Evening: Newer Phases of Institution Work—Chairman, Elizabeth Goodrich, Simmons College. My Work as an Adviser in Cafeteria Management—Elizabeth Bohn, New York City; The Work of a Consultant for Households and Institutions—Mrs. Alice Dresser, Household Consultant, Boston; Supervisory Work for a Dietitian—Lenna Cooper, Supervising Dietitian, Surgeon General's Office, Washington, D. C.; Time and Motion Studies (lecture and lantern slides)—Mrs. Frank Gilbreth, Author of "Scientific Management," Providence, R. I.

On Saturday morning two group conferences were held, one for hospital dietitians, led by Eleanor Wells, the second for those interested in other types of administrative work, the discussion led by Katharine Fisher. Reports were given by directors of school lunch rooms, industrial cafeterias, dormitories, and clubs. The ques-

tion of apprenticeship work and practice fields for the inexperienced graduate brought a very spirited discussion, showing that this is one of the very vital problems confronting those interested in sending competent directors into the field. Many expressed a wish that this Round Table be repeated next year as, through it, workers in these fields might keep in touch with one another and with more recent developments in administrative activities.

Fellowships in Home Economics. The Department of Home Economics of the University of Chicago has a fund for the year 1919-1920 for University fellowships in Home Economics. Two will probably be awarded. Candidates must already have done some graduate work in an institution of high standing. At least part of the time of the fellows is to be spent in research in nutrition or related fields. The work may be counted toward advanced degrees.

Applications with recommendations and statement of training and experience should be sent to the Chairman of the Home Economics Department before July 20.

A Scholarship in Home Economics for juniors, seniors, and graduate students is being offered for the year 1919-1920 by the University of Wisconsin chapter of Omicron Nu. This scholarship pays \$200.00 and is open for applications. Award will be based on scholarship, general character, and financial need.

The Division of Home Economics of the University of Minnesota has just enlarged the activities of its Home Management houses to include the care of babies. A baby will live in each house and for the twelve weeks of the spring quarter will be cared for entirely by the students in the houses. The financing of the project is being undertaken for the present by the College Home Economics Association.

The University of Illinois, in addition to the regular summer courses in Home Economics, is holding this summer a school for extension workers, and also a school for the training of Smith-Hughes teachers.

The Ellen H. Richards Memorial Fellowship, offered jointly by the Trustees of the Memorial Fund and the University of Chicago, has been awarded to Elizabeth Wilhelmina Miller. Her academic record is as follows: University of Chicago, Ph.B., 1914; A.M., 1915; Instructor in Home Economics, State Normal College, Mayville, N.D., 1912-13; Instructor in Home Economics, University of Chicago, 1915-18; Associate Professor and Head of Household Science Department, Iowa State College of Agriculture, 1918-19. Miss Miller did editorial work in the Home Economics Section of the Food Administration, Washington, D. C., during the autumn of 1917. She is joint author with Mr. Emery and Mr. Boynton of a Laboratory Manual of Applied Chemistry, and has published the following articles: "The Solution of Antimony from Enameled Cooking Utensils;" "A Home Made Soy Bean Meal for Diabetics" (with Lydia Roberts); "Problems in Cake Making" (with Bernice Allen). Miss Miller is to spend the year 1919-20 in carrying on nutrition studies in the University of Chicago.

Notes. Miss E. Grace McCullough has resigned her position at the Peter Bent Brigham Hospital, Boston, to take effect June 1, 1919. She has the honor of an appointment by the Rockefeller Foundation, China Medical Board, to develop the dietary work at the Peking Medical College and to organize the dietary department of the new hospital now in the course of construction. She will select equipment for the hospital before sailing, August 10, from San Francisco.

Dr. Sophonisba Preston Breckinridge, Assistant Professor of Social Economy in the University of Chicago, who will give courses during the coming Summer Quarter on "Family Expenditures" and "The Child and the State," has accepted an invitation to address the first conference of housewives to be held at the University of Iowa, June 18-22. Dr. Breckinridge is one of the authors of "The Modern Household" as well as of "Truancy and Non-Attendance in the Chicago Schools."

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THE NUTRITIONAL STANDARDS OF ADOLESCENCE¹

GRAHAM LUSK

An adequate food supply is the essential requisite of national existence. If too little food is available the first to suffer are the old people, and then the children, though these are often fed with the food designed for the mother who sacrifices herself for the well-being of her offspring.

Before the war great numbers of people were habitually in a state of undernutrition. This reduces the working capacity and diminishes the resistance to disease, especially to tuberculosis. Such a condition gradually undermining the welfare of a nation may be exemplified by giving a description of the food conditions in Germany, a knowledge of which has lately become available. It is stated by Rubner² that food difficulties first arose in the middle of 1916. One important article of food after another disappeared from the market or could be obtained only in homeopathic doses. Thus, the available amounts of meat, eggs, milk, and butter became less and less. Failure of the potato crop of 1916 led to the substitution of turnips in the diet, both in the cities and in the industrial centers during the winter of 1916-17, and from the effects of this diet, the people never recovered. There was insufficient milk for the children. The censorship of the press prevented the true condition from being generally known and people were taught to congratulate themselves upon their loss in weight.

A secret inquiry made at the end of 1917 led Rubner to report to the Imperial Ministry of Health how widespread the evil effect of the war

¹ Presented at the Children's Bureau Conference on Child Welfare Standards, Washington, D. C., May, 1919.

² Rubner, M.: *Berliner klinische Wochenschrift*, 1919, lvi, 2.

diet had been upon the welfare of the people. The psychology of the nation had changed. The only thought was to obtain a sufficient quantity of food, albeit devoid of flavor; there was no initiative, only unproductive depression. Children forgot how to laugh, to cry, or to play.

Information reached London early in 1918 that the insurance companies of Germany had secretly warned the government as to the failing health of the people, which was reported to be more disastrous in loss of life than were the military operations. This now appears as an undoubted reflection from the meeting described by Rubner. The latter states that certain highly placed individuals forbade a further prosecution of the inquiry.

Kraus describes how hunger forms an excellent background for disease, since anti-bodies are not produced as when adequate nutrition is possible. Hence, the tuberculosis death rate doubled during the war and reached the height prevailing twenty-five years ago.

Kraus³ relates that the food conditions affected women in such a way as to produce cessation of the menses, sterility, and reduction in the quantity of milk of the nursing mothers, which milk was also poor in fat. The average weight of children at birth fell off. Cow's milk of inferior quality was given to children, for there was no longer any hygienic control. With the older children the evil effects of the one-sided diet became more pronounced the longer it was continued. A diet which was made up essentially of bread and potatoes proved injurious to children. There was a deficiency in protein, fat, and vitamins. The diet led to scurvy, tuberculosis, rickets, and anemia. Nervous diseases were aggravated and constitutional anomalies intensified.

Reports have also come out of Germany showing how an absence of butter fat led to stunted growth and the affliction of xerophthalmia, a disease of the eye, both of which symptoms can be experimentally produced in young rats in the absence of the fat soluble vitamins contained in butter fat. These stories are not German propaganda. An American medical commission conducted an investigation into the condition of the children of Treves after its occupation by the American Army and found a retardation in growth of two years, children of fourteen having the physical development of those of twelve.

In the Bohemian city of Prague a widespread presence of infantile scurvy is bitterly described by Epstein⁴ as existing in the early sum-

³ Kraus: *Berliner klinische Wochenschrift*, 1919, lvi, 3; Czerny: *Ibid.*, p. 4.

⁴ Epstein: *Jahrbuch für Kinderheilkunde*, 1918, lxxviii, 237.

mer of 1918. Almost every preparation for the welfare of the sick child had disappeared from the market, the rich buying at high prices the "last bottle" of such a material from the apothecary. Milk was very scarce at a time when the farmers were freely using half their milk, which was so necessary for sick children, in the preparation of butter. It is well known that this kind of profiteering had long been prevented in England.

These details are cited in order to emphasize the necessity of such an organization of agriculture or of food supply that the national welfare of a country be maintained. That such an organization is incompatible with industrial disorder is a self-evident proposition.

Both the quality and the quantity of food should be considered. Children should receive a diet containing a sufficient quantity of *vitamines*. Of fundamental importance for growth and good health is the butter fat contained in milk or taken separately in the form of cream or butter. This has been set forth above. Stunted rats which have been long deprived of this substance grow to normal size when it is added to an otherwise adequate diet, so that it may be presumed that, with the administration of butter fat to children whose growth has been retarded, normal growth will be obtained. Pork fat and vegetable oils, like olive oil, do not contain the fat soluble vitamine and cannot take the place of milk. Beef, eggs, liver, and kidneys are, however, quite rich in this material, and it is present in spinach, lettuce, beet-tops, and the like. Olive oil taken with lettuce or beet-tops may take the place of milk in the diet of adults. Through eating the green substances of the field the cow gains for her milk this growth-promoting, life-preserving vitamine. It follows from this that the milk of a cow nourished on clover from the fields will be of higher nutritive value than that of one fed from corn ensilage.

If a food be given which consists mainly of highly polished rice, or highly milled grains, beri-beri, a profound nervous disorder, results. This disease has not appeared in war time in the European nations because wheat has been milled at about 85 per cent or more, so that a large proportion of the bran, which contains the water-soluble vitamine, has remained in the bread. Beri-beri can also be cured by administering the aqueous extract of peas or rice polishings or of the evaporated salts of milk. When a child can receive an ordinary mixed diet there is no danger in partaking of white bread.

Scurvy appears when the diet contains no anti-scorbutic vitamins, for example by using diets which are free from fruits, fresh vegetables, and tubers such as potatoes. The cure is found in lemon juice, fresh vegetables, potatoes, germinated peas, beans and lentils, and in canned tomatoes. Hess finds that the younger and more tender the green vegetable, the greater its vitamin content, hence an instinctive dietetic preference.

The question of vitamins for the welfare of the children is bound up in the development of dairy farming, fruit culture, and the production of fresh vegetables.

Furthermore, milk contains salts for the growth and repair of the bones, protein for the growth and repair of the muscles and other organs of the body, together with fat and sugar which give fuel for the maintenance of the human machine. Very few people realize that the cost of milk per 1000 calories is usually only one-half the cost of beef. Thus, in Paris on September 1, 1918, 1000 calories cost, as milk 98 centimes (equals 17 cents), as beef 175 centimes (equals 31 cents); and in New York on January 1, 1919, 1000 calories cost, as milk 24 cents, and as beef 45 cents. In Paris beef was 82 per cent more costly than milk, and in New York it was 87 per cent more costly. The controlled London market does not lend itself for comparison. On account of the great value and lesser cost of milk the writer has on other occasions urged that a family of five should not buy meat until it has purchased three quarts of milk daily.

Milk is wanting in iron and hence children should be given green substances which contain this element, especially spinach which contains a considerable quantity. The yolks of eggs also contain it, as do, of course, beef and beef juice.

The curse of the ignorant and poorer classes is the giving of tea and coffee to their children instead of milk. This is done in families in which meat is regularly purchased. There is not sufficient education for the parents to realize that milk is a cheap and well-nigh indispensable body-building food. It is not desirable to give to children or to adults the minimal quantity of protein compatible with existence, but it is safer to allow protein in a certain excess of the actual needs in order that the tissue cells be filled up with protein. Rubner has called such material "the improvement quota" of protein and there is evidence that this descriptive terminology is justified. This, however, does not warrant the eating by any man of a pound or more of beef a day, meat

which costs five times as much fodder to produce as does a similar food value in milk.

With regard to a sufficiency in the quantity of a diet the question becomes involved in the number of calories necessary for the maintenance of the living organism at various ages.

Below are presented the relative physiological needs of food, in the first column as estimated by Atwater, and in the second column as adopted by the Inter-Allied Scientific Food Commission of 1918.

Relative physiological needs

| | AGE IN YEARS | ATWATER | INTER-ALLIED SCIENTIFIC FOOD COMMISSION |
|------------|--------------|---------|--|
| Child..... | 0 to 2 | 0.3 | } 0.5 |
| Child..... | 2 to 6 | 0.4 | |
| Child..... | 6 to 10 | 0.5 | |
| Boy..... | 10 to 12 | 0.6 | 0.83 |
| Girl..... | 10 to 14 | 0.6 | 0.83 |
| Boy..... | 12 to 14 | 0.8 | 0.83 |
| Boy..... | 14 to 16 | 0.9 | 1.00 |
| Girl..... | 14 to 16 | 0.7 | 0.83 |
| Men..... | | 1.0 | 1.00 |
| Women..... | | 0.8 | 0.83 |

The British Food Committee of the Royal Society had computed that an average man doing an average day's work required 3000 calories, as ingested, or 3300 when the supply was considered from the national standpoint and allowed for waste. When it later computed the quantity of food available for their whole population in the five year pre-war period 1909-13, dividing it among the population in accordance with the relative values adopted by the Inter-Allied Scientific Food Commission, they found that 3,410 calories had been available per man per day. With increased care in the use of food a national stock of 3,300 calories per "man" per day appears ample. The earlier statement that a nation could live on what it wasted before the war has been abundantly refuted.

The study of standards of metabolism has occupied much time during recent years. At the time of the establishment of the Russell Sage Institute respiration calorimeter in Bellevue Hospital satisfactory standards for the determination of what constituted normal metabolism were nonexistent. From the work of Du Bois and his associates it has

been firmly established that the well nourished, normal, adult man, when resting in bed before breakfast, produces 40 calories per hour per square meter of surface within an error limit of about 10 per cent. This is known as the basal metabolism. Du Bois found that the metabolism of boys between 12 and 13 years old was 50 calories per square meter of surface, or 25 per cent higher than in adult men. At this time, before the onset of puberty, the intensification of the growth impulse is accompanied by a greatly increased metabolism when height and weight are regarded. Furthermore, Du Bois investigated the metabolism of these same boys two years later under identical experimental conditions. The metabolism per square meter of surface had fallen so that it was only 11 per cent above the average for the adult man. In the three youngest boys the metabolism was actually greater in calories produced during the twelfth year than during the fourteenth year, although the boys showed gains in weight of between 35 and 50 per cent. It is well known that a normal boy is extremely active at this period of his life. Investigations by Gephart have shown that American boys in St. Paul's School partook of as much as 5000 calories daily. Sir Henry Thompson collected data, prior to his death on an Irish passenger steamer sunk by a German submarine in the summer of 1918, which showed an average consumption of 3,500 calories daily by English school boys, even in the difficult days of the winter of 1918. At Eton and Harrow the spirit of patriotism at one time certainly caused too great a voluntary restriction upon the quantity of food taken and many boys lost in weight, often to the detriment of their health.

It has been reported from Berlin⁵ that, in an asylum for foundlings in the third year of the war, an attempt was made to nourish three boys between six and eight years old with food containing 1,000 calories, and four other boys between eleven and fourteen with 1,334 calories. This may be calculated as being less than the basal metabolism of the children and the result was what was to have been anticipated, a loss in weight and in body protein of all these children, who were not only under height for their age but under weight for their height.

Five thousand calories daily certainly appears to be an extravagant quantity of food to furnish a boy. It is 20 per cent more than the amount consumed by a soldier at hard drill. It would be very interesting to investigate the economic efficiency of the muscles of the grow-

⁵ Fuhge: *Jahrbuch für Kinderheilkunde*, 1918, lxxxviii, 43.

ing boy. Since his basal metabolism is higher than that of a man it is not at all unlikely that his muscular efficiency is on a lower plane, that is to say, that he may require more energy to walk or to move a bicycle a given distance than would an adult of similar height and weight. This point has never been investigated.

A chart showing the food requirements of boys from birth to sixteen years of age, as calculated from all the material available a year ago,⁶ will soon be published.⁷ To this have been added the requirements prescribed by the Inter-Allied Scientific Food Commission; the requirements calculated by Atwater; the actual consumption of food by rather inactive school boys, investigated by Carl Tigerstedt in 1912, reports of which have just reached this country; the reported food intake of American and English school boys and of English school girls.

In addition to this it may be noted that Pflaundler's⁸ suggested corrections of the erratic, official dietary for the children of Munich, as of January 1, 1918, are in full accord with the recommendations of the Inter-Allied Scientific Food Commission from the end of the first year to the tenth year of age.

On reading the evidence it appears that much knowledge is lacking, much is needed to fill in the picture. There is now ample food in the country. For it there is paid by our people twelve thousand million dollars per annum, or one quarter of the income of the working population. Housewives are not organized politically, militant suffragists have no interest in the kitchen, but the time is coming when the importance of a more thorough understanding of the science of nutrition will be realized in the land.

⁶ Lusk, G.: *Journal of the American Medical Association*, 1918, lxx, 821. The literature references are given here.

⁷ The chart will appear in the Proceedings of the conference, soon to be issued.

⁸ Pflaundler: *Münchener Medizinische Wochenschrift*, 1918, lxx, 173.

RECENT ADVANCES IN OUR KNOWLEDGE OF FOOD
SELECTION AND PREPARATION

MABEL T. WELLMAN

Indiana University

Most of us took the slogan "Win the War in the Kitchen" so seriously that all our thoughts were concentrated on the problems arising from the special needs of food conservation. Now we are, for the time at least, rejoicing in our freedom to use white flour and sugar again; and any article summarizing food conservation results would surely be passed by unread. Consequently no attempt will be made to report these results at this time. Later, when the reaction is less evident, we may be able to learn from those experiences a good deal that is applicable to the usual conditions of living.

Leaving out such material, however, makes less than usual to report for the year. It is unfortunate that most of the work which is being done in this line in the different colleges and universities is not published. While much of it is undergraduate work, it would be excellent practice for students of different institutions to compare notes on results and receive outside criticism. It is to be hoped that some method of working out this plan will soon be formulated by the Science Section of the American Home Economics Association.

Most of the extended work on cooking problems that was published this last year has appeared in the JOURNAL OF HOME ECONOMICS. Nevertheless, it may be worth while to include mention of those results in this summary, together with what has appeared in more technical periodicals.

Bread. Cohn and Henderson¹ report the possibility of improving the gluten in the flour and stimulating the growth of yeast in bread making by increasing the acidity of the dough. Acids, alkalies, and certain salts produce changes in the elasticity, tenacity, and cohesiveness of the protein, partly by modifying the swelling consequent on absorption of water. Weak acids, such as lactic acid or vinegar, can be added to the dough with good results, the activity of the yeast being greatly increased thereby. The amount to be added will vary with the amount of yeast used, and the length of the fermentation process.

¹ Physical Chemistry of Bread Making. *Science*, 1918, p. 501.

The authors recommend determining this experimentally in individual cases by testing the resulting loaf when baked. A few drops of methyl² red are added to a slice of the bread. The solution is made by dissolving 0.02 per cent of methyl red in 60 per cent alcohol. The reagent is allowed to remain on the bread for five minutes. The acidity of the dough is right if the methyl red then shows no orange color.

The writers conclude that the acidity of the dough at the time of baking is the most important variable factor in bread making. They point out that the proteins in wheat-substitute flours absorb more of the free acid than do wheat proteins in dough, thus reducing the natural acidity of such doughs. This would account for the necessity of increasing the amount of yeast to produce good results in substitute breads.

The Connecticut State Station Bulletin³ reports a series of baking tests conducted in several bakeries. A proprietary yeast food containing 25 per cent calcium sulphate, 9.7 per cent ammonium chloride, 0.3 per cent potassium bromate, 25 per cent sodium chloride, and 40 per cent wheat flour was used. As a result "not only half the normal amount of yeast (was required), but by using this smaller amount of yeast less carbohydrates were destroyed, and the presence of the . . . salts, more particularly ammonium chloride, stimulated yeast production, with an actual increase of protein in appreciable amounts. Moreover . . . this saving of food ingredients was secured without any sacrifice in the quality or nutritive value of the bread."

Mrs. Norton in her address at the recent Home Economics meeting in Chicago spoke of the need to consider possible saving in communal cooking. Anice W. Whitney in⁴ "Communal Kitchens in European Countries" reports the movement for such kitchens successful in many of the recent warring countries. These make not only for the conservation of food and fuel, and lessen cost of production, but give opportunity to the poorer classes to obtain both cheaper and better food. It would seem surely that at least bread baking could become communal here. A recent study⁵ of the percentage of families, grouped by nationalities,

² Henderson, L. J. Preventing Rope in Bread. *Science*, vol. 48, pp. 247-8. Cohn, Cathcart, and Henderson. Measurement of the Acidity of Bread. *Jour. Biol. Chem.*, vol. 36, pp. 581-6.

³ Twenty-second Report on Food Products. Bul. 200 (1917), pp. 101-161.

⁴ Mo. Rev. U. S. Bur. Labor Statistics, 6 (1918), no. 6, pp. 58-63.

⁵ A Comparison of the Use of Baker's and Homemade Bread among Different Nationalities in the United States. *Jour. Home Econ.*, vol. x, pp. 561-3.

who already buy rather than bake their bread, is interesting in this connection.

Fats. Interesting work⁶ on the absorption of fat in doughnuts made from varying recipes is reported from the University of Chicago. The conclusion is drawn that increasing the fat or the sugar in the recipe results in the absorption of increased amounts of fat in frying; while increasing the egg or the flour decreased the absorption. This, it is thought, accounts for the difference in the percentage of fat (21%) reported in the Government Bulletin on the Chemical Composition of Food Materials, and the 34.7 per cent found as the average fat in their "home made" doughnuts prepared from standard recipes. Cotton-seed oil at 200°C. was the fat used in frying.

Since there is still a shortage of fats for world use, it may be worth while to call attention to the article on Vegetable Oils and Their Use in Cooking.⁷ The successful employment of these fats in pastry and cake, and in other ways, with consequent decrease in expense is noted.

The housewife who must choose between butter and margarine will be interested in an article by Halliburton and Drummond⁸ on the nutritive value of the two with special reference to the fat-soluble vitamins. This they find present in margarines made from "oleo oil" but not in those in which vegetable oils or nut butters have replaced the beef-fat. They state "It would be truer economy even for the poor to purchase smaller quantities of oleo-oil margarine if they cannot afford the luxury of butter."

Cake. Also from the University of Chicago laboratory are reported experiments in cake making.⁹

"In cake making, manipulation is one of the chief factors in determining the quality of the product. In an ordinary cake the method of combining ingredients is not in itself important except as it controls the amount of mixing and beating. There is an optimum amount of beating that is desirable, from one to two minutes, depending upon the energy with which the beating is done. Less than that gives a coarse crumbly texture; more gives a compact texture with tunnels.

"The relation which the various ingredients bear to each other is also important. Increasing the sugar up to a certain point makes the

⁶ Fat Absorption in Frying Doughnuts. M. A. McKee. *Jour. Home Econ.*, vol. x, pp. 18-20.

⁷ Blunt, *Jour. Home Econ.*, vol. x, pp. 23-26.

⁸ *Jour. Physiology*, vol. 51, pp. 235-251.

⁹ Problems in Cake Making. Miller and Allen. *Jour. Home Econ.*, vol. x, pp. 542-7.

texture finer; increasing beyond that makes the texture coarse and causes the cake to fall. Increasing egg alone toughens the cake and produces tunnels with beating. Increasing fat alone makes the cake rich in flavor and tender. If used in excess, the cake will not hold its shape. Neither fat, sugar, nor egg can satisfactorily be increased alone beyond a certain point. All these must be increased together in such proportions that the effect of the fat and sugar on the one hand will offset the egg."

Egg-substitute powders. The number of egg-substitute powders on the market everywhere makes one believe they must be a financial success.¹⁰ Analyses of a number of these show them to be composed of starch, a permitted coal tar dye for coloring, and gelatine or casein with occasionally a little albumin. They do not, of course, furnish the nourishment of eggs. One such powder on this basis shows a package which claims to be equivalent to twelve eggs, but really is, in amount of protein, equal only to 1.7 eggs; in amount of fat equal only to 0.14 eggs; in fuel value equal only to 2.6 eggs.

Baking tests¹¹ made with seven of these powders substituted in turn for the egg in true sponge cake gave failures. Moreover, the average selling price is more for a pound of these powders than would be paid for the dry material of hen's eggs at 40 cents per dozen.

Milk. A reprint¹² from the British Public Health Reports suggests that in present conditions in cities, especially in hot weather, it is often desirable to use dried milk powder in preference to ordinary milk. Dr. Mendenhall¹³ writes that little attention has been paid in the United States by manufacturers of dried milk to the advisability of putting out a product suitable for use in infant feeding and at the same time cheap enough to attract general notice. As yet very little of the best milk is dried and much on the market is made from an inferior quality of milk and contains bicarbonate of soda or some other alkali. She believes it should be possible to put out a good grade at a reasonable price. Osborne and Mendel in an article on the Water-Soluble Vitamines in Milk¹⁴ point out that baby food made by diluting top-milk and adding sugar give the child relatively too small a proportion of water-soluble

¹⁰ Egg-Substitute Powders. *Am. Food Jour.*, February, 1918.

¹¹ Baking Experiments with So-Called Egg-Substitutes. *Am. Food Jour.*, May, 1918.

¹² *Am. Food Jour.*, October, 1918.

¹³ Powdered Milk and the Dairy Problem. *Forecast*, June, 1918.

¹⁴ *Jour. Biol. Chem.*, vol. 34, pp. 537-553.

vitamine, and think that while this may be sufficient if enough is taken, if the child's appetite fails the reduction of the vitamine may cause endless dietary troubles. They believe there is need for prompt investigation to determine the best way to reinforce the vitamine content.

Hammer and Goss¹⁵ investigated the bacterial content of ice cream. They report that proper care of the freezer is of great importance in lessening contamination, also that there is usually a fall in the bacterial count if the cream stands packed after freezing. They find water ices contain far fewer bacteria than ice-cream, and that ice creams other than vanilla contain large numbers of bacteria.

Vegetables. In an article on the Dietary Value of the Potato, McCollum, Simmonds, and Parsons¹⁶ find no extraordinary value in the potato protein for growth, instead, that young rats did not make normal growth on it until casein was added to their diet. Since other experimenters have reported successful feeding of adults with potatoes and margarine practically free from protein, they make the interesting suggestion that the proteins required for growth and repair may not be identical.

The effect of various methods of drying vegetables on their vitamine-content is important.¹⁷ Givens and Cohen show that cabbage dried in a blast of air at 40–52°C. retains only some of its antiscorbutic qualities. Dried two hours at 75–80°C. and then at 65–75°C. for several days, it has lost all of this property. Cooked thirty minutes and then dried at 65–75°C., both cabbage and potatoes have no antiscorbutic power. Fresh tomatoes,¹⁸ which are a very effective antiscorbutic agent, when dried raw in a blast of air at either low (35–40°C.) or high (55–60°C.) temperature still retain a significant amount of their antiscorbutic potency. Hess and Unger¹⁹ have shown that canned tomatoes retain their antiscorbutic property and have actually fed them in place of orange juice to infants living on pasteurized milk. This is of special interest when we consider the persistent use of canned tomatoes by the very poor.

¹⁵ Bacteria in Ice-Cream. Iowa State Bulletin 174.

¹⁶ *Jour. Biol. Chem.*, vol. 36, pp. 197–210.

¹⁷ Antiscorbutic Properties of Desiccated and Cooked Vegetables. *Jour. Biol. Chem.*, vol. 36, pp. 127–145.

¹⁸ Antiscorbutic Properties of Vegetables. Given and McClugage. *Jour. Biol. Chem.*, vol. 37, pp. 253–265.

¹⁹ Canned Tomatoes as an Antiscorbutic. *Proc. Soc. Exp. Biol. and Med.*, 16: 1–1918.

It has also been found that vegetables dried in a current of air from an electric fan do not have the keeping qualities of those dried with artificial heat, or with heat from the sun.²⁰

Osborne and Mendel²¹ find a small amount of green vegetables supplying fat-soluble vitamins for long continued and vigorous growth, and say "if one may draw conclusions from the limited data now available, it seems that green vegetables supply an important addition to the diet of man," and suggest that care should be taken not to reduce greatly the quantity of green vegetables customarily eaten until we have further knowledge of foods."

Given²² points out that there may be a loss of inorganic constituents, particularly of calcium, not only in the cooking of foods but also in the preparation of them for drying, and calls attention to green vegetables as a possible source of calcium of hitherto unrecognized importance. Further work,²³ however, leads to the conclusion that the calcium in green vegetables is not so available as in milk.

A new method of preserving²⁴ fruits and vegetables is by the use of asphyxiating gases (COCl_2 , Cl , Br). The odor of the gas quickly evaporates, and it is claimed that the product is perfectly wholesome food and that this method may supersede refrigeration.

Canned fish. A leaflet²⁵ intended for housewives living in suitable regions, urges the canning of fish for domestic use.

The examination²⁶ of 44 samples of commercially canned salmon find all sterile. Twenty cans analyzed for tin show it to be present in the fish in amounts so small as to be insignificant.

Canning. Experiments have shown that the preliminary²⁸ cold dip after blanching vegetables for canning does not affect the bacteria present nor influence the question of the subsequent spoilage. Miss Denton²⁷ finds that with blanching, many more vegetables may be placed in the jar, but that with vegetables especially difficult to can

²⁰ Connecticut State Sta. Bul. 200.

²¹ Vitamins in Green Foods. *Jour. Biol. Chem.*, vol. 37, pp. 187-210.

²² Dried Vegetables with Special Reference to Their N and Ca Content. *Jour. Am. Med. Assn.*, vol. 70, p. 1743. ²³ Experiments on the Utilization of N, Ca, and Mg, in Diets Containing Carrots and Spinach. McClugage and Mendel. *Jour. Biol. Chem.*, vol. 35, p. 345.

²⁴ Lo Menoco. *Chem. Abs.*, 1918, p. 1401.

²⁵ U. S. Dept. Com., Bur. Fisheries, Econ. Cir. 28.

²⁶ Bushnell. *Jour. Ind. and Eng. Chem.*, vol. 9, pp. 678-9.

²⁷ Bushnell, Influence of Cold Shock on the Sterilization of Foods. *Jour. Ind. and Eng. Chem.*, vol. 10, p. 432.

²⁸ What Temperature is Reached Inside the Jar during Home Canning? *Jour. Home Econ.*, vol. x, pp. 548-552.

there is a distinct disadvantage in packing too closely, since with more boiling water in the jar the sterilization temperature is more quickly reached. She emphasizes the wastefulness of not utilizing this juice afterwards, and gives suggestions which make it less possible "for two women using the same material and following the same directions with equal care and intelligence" to obtain very different degrees of sterilization.

Jelly making. In *Kitchen Tests for Pectin in Jelly Making*,²⁸ Miss Denton reports the successful use of wood alcohol or of denatured grain alcohol for the test, but finds the Epsom salt method unreliable for the housekeeper.

A Method of Preparing Pectin²⁹ by its precipitation with ammonium sulphate should make commercial pectin cheap enough for practical use.

Baking powder. A recent standard³⁰ adopted by the United States Department of Agriculture makes the required available carbon dioxide 12 per cent. This should give us more uniform products.

Saccharine. An article by Burge³¹ in *Science* concludes that saccharine in food not only is a sweetening agent but, although not oxidized itself, one facilitating the oxidation of other food materials. This it does by stimulating the liver to an increased output of catalase which is the enzyme in the body chiefly responsible for oxidation. Burge says that Herter and Folin have reported saccharine, in the amounts that would be used, harmless; but he believes it should be positively helpful in the diet, particularly in diabetes, where the chief difficulty is with lack of oxidation.

Various foods specially recommended. Various kinds of foods have been urged on our attention, some old, many more or less new. Langworthy and Holmes³² report the dasheen as desirable from the digestive standpoint.

Soy beans contain, we are told in the *Journal of Biological Chemistry*,³³ both the water-soluble and the fat-soluble vitamins, together with protein of high physiological value. The United States Depart-

²⁸ *Jour. Home Econ.*, vol. x, pp. 520-521.

²⁹ Hunt. *Science*, vol. 48, pp. 201-202.

³⁰ *Am. Food Jour.*, March, 1918.

³¹ *Science*, vol. 48, pp. 549-550.

³² Digestibility of the Dasheen. Bul. 612, Sta. Rel. Service.

³³ Daniels and Nichols. *Jour. Biol. Chem.*, vol. 32, p. 91.

Osborne and Mendel. *Jour. Biol. Chem.*, vol. 32, p. 376.

ment of Agriculture has put out a bulletin³⁴ on soy-bean flour, and Roberts and Miller³⁵ tell how to make soy bean meal at home.

Peanuts³⁶ also are especially recommended to our notice, as well as the banana.³⁷

The Jerusalem artichoke,³⁸ the American papaw,³⁹ alligators,⁴⁰ whales⁴¹ and seals, and reptiles⁴² are all called to our attention as food products.

In the Utilization of Some Nuts as Food, Lieutenant Cajori⁴³ discusses the value of various kinds of nuts, while Drummond⁴⁴ writes, on the Nutritive Value of Certain Fish, showing that the coagulable proteins of the muscle tissue of cod, herring, and canned salmon have a nutritive value as high as those in beef, and that "fatty" fish may be a valuable source of the fat-soluble growth-vitamine.

Perhaps no food has received more commendation recently than has milk, especially as an essential in the dietary of children.

³⁴ Office of Exp. Sta. Circ. 113.

³⁵ *Jour. Home Econ.*, vol. x, pp. 64-70.

³⁶ Feeding Experiments with Peanuts. *Jour. Biol. Chem.*, vol. 33, p. 295.

Peanuts as a Great American Food. U. S. Dept. Agr. Year Book, 1917, pp. 289-301.

Peanut Flour. U. S. Dept. Agr. Circ., 110.

³⁷ *Sci. Mon.*, 1918, pp. 65-75.

Jour. Biol. Chem., vol. 36, pp. 171-189.

³⁸ *Sci. Mo.*, 1918, pp. 260-269.

³⁹ *Jour. Home Econ.*, vol. ix, pp. 505-511.

⁴⁰ *Science*, vol. 47, p. 1226.

⁴¹ *Nation*, March 21, 1918, p. 45.

⁴² *Sci. Mo.*, December, 1917.

⁴³ *Jour. Home Econ.*, vol. x, pp. 304-311.

⁴⁴ *Jour. Physiol.*, vol. 52, pp. 95-109.

HOME DEMONSTRATION SCHOOLS AND SHORT COURSES IN FLORIDA

SARAH W. PARTRIDGE

Florida District Home Demonstration Agent

Not all home economics teaching is done in the class rooms. For the past three years the home demonstration clubs of Florida have been studying in their monthly meetings well planned lessons, the outlines for which were prepared by the State Home Demonstration Staff at the Florida State College for Women. At each meeting the lesson is supplemented by a demonstration given by the County Home Demonstration Agent, or some member of the local club. In January, 1919, the following announcement was made, and three courses were offered.

In order to assist the women of Florida to learn the essentials of an economical and efficient diet, the Florida State College for Women, in coöperation with the United States Department of Agriculture and the State College of Agriculture, offers extension schools for housekeepers. These schools may vary in length from two to five days, depending upon the number of housekeepers interested. The school may be given independently or in connection with a home demonstration club, a Woman's Club or other organization. One or more State workers, in addition to the county home demonstration agent, will give the course. At the close of the Housekeepers School an examination will be given those who care to take it. The Florida State College for Women will give a certificate to those who have attended 80 per cent of the meetings and successfully passed the test. If a home demonstration club is pursuing one of the regular home demonstration courses, the members may wait until the end of the year before taking the examination. The certificate granted does not guarantee the person certificated to be a skilled chef, but it does presuppose a knowledge of the fundamentals of the cookery processes, an understanding of terms used, and the reason for the choice of foods in making a menu. The club or other organization agrees to furnish a suitable room, a stove, a table, a few cooking utensils, and the food materials used.

COURSE I—GENERAL CONSERVATION

1. Sugar saving
2. Use less fat
3. Conserve clothing
4. Backyard poultry
5. Fruit and vegetable culture
6. The use of eggs and milk
7. Meat substitutes
8. Child welfare
9. The home
10. Principles of cookery and preservation of fruits and vegetables

COURSE II—WHAT KIND OF FOOD AND HOW MUCH IS NEEDED

- | | |
|-------------------------------|---------------------------------|
| 1. Food and the war | 6. Conservation of fats |
| 2. The day's menu | 7. Milk and milk products |
| 3. Sugar and other sweets | 8. Fresh fruits and vegetables |
| 4. Breads | 9. Food for children |
| 5. Meats and meat substitutes | 10. A well filled market basket |

COURSE III—ADVANCED STUDY OF FOODS

- | | |
|------------------------------|---|
| 1. The human mechanism | 7. Fats |
| 2. Fuel for the human engine | 8. Food for children—Child welfare |
| 3. How much food is enough? | 9. School lunches—Food and care of adolescents. |
| 4. Protein foods | 10. Economics of the food problem. |
| 5. Sugars | |
| 6. Starches | |

There is no certificate granted for the completion of Course I. Clubs using Courses II and III are entitled to an examination on the completion of the course. All who successfully pass the test, with a grade of 75 per cent or more, will receive a certificate from the Florida State College for Women.

Extension Schools for housekeepers are planned to follow the work as outlined for Course II. If the club desires to have such a school, application may be made to the State Home Demonstration Agent, Florida State College for Women, Tallahassee. If the club desires, the examination may be taken at the close of the school or postponed until the series of programs has been given to the club.

Course III is detailed study of the chemistry of food and nutrition. It is planned for those who have studied some chemistry and wish to do some advanced work along that line.

The courses are planned to be given consecutively. Differences in seasons or some other reason may make it advisable to give the lessons in a different order. The members of each club may select the course they wish, and decide on the order of the programs.

In addition to the daily lecture and demonstration, special lessons in government bulletins were assigned for study, the bulletin "A Day's Food in War and Peace" being most generally used.

To date, twenty-seven full time schools, in which the course of ten lessons has been fully covered, have been held. 1032 women enrolled for study; 97 have taken written examinations. This seems a small

RELATED ART FOR HOME ECONOMICS COURSES IN SMITH-HUGHES SCHOOLS

HARRIET GOLDSTEIN

University of Minnesota

In the Smith-Hughes plan for home economics education, one half of each school day is given over to home economics and related courses. These courses include not only the courses in the clothing and foods groups but the related science and the related art.

Through this Smith-Hughes plan it becomes not only the privilege but the responsibility of the departments of home economics to play an important part in art education. When the homemakers shall be so trained in the ideals of beauty that art becomes part of their daily life; it will not be long before the effect will be seen throughout the nation. To accomplish this end the art teachers and the home economics teachers of the country should work together for some efficient plan for making art work function with the home economics courses. Without this coöperation we cannot have the highest type of work in clothing, in house planning, or in house furnishing.

The subject matter of the art courses must be closely related to home economics problems, and the sooner the art problems can be carried over into actual construction the more vital the training will become. In all cases the art training should precede or parallel construction. To successfully work out such a plan the art teacher must get the home economics view point, and it is quite as necessary for the home economics teacher to have an art foundation for her work.

The aim of the related art course should be to train the student in art appreciation, so that beauty will become so strong a force that it will be a motive in everything she does. To do this there are certain fundamental art principles of which the student should gain such a practical knowledge that she will express them in her dress and in her home problems.

She must realize that the art of a fine painting or of a Gothic tapestry, for example, is just the same expression that she finds in a good chair or in a beautiful dress. If through these related art courses we can get rid of the old art school idea that the arrangement of objects on a canvas is art and that the arrangement of objects against a wall is house furnishing we shall have done a good piece of work.

The elements of all art are color and form, and its fundamental principles are proportion, centers of interest, rhythm, balance, and harmony. The student should have a working knowledge of each of these principles, for, in every home problem in which looks as well as use are to be considered, these principles must be followed. The girl must make so many conscious applications of these art principles that in time they will function unconsciously.

One way in which the high school student might be trained to understand and appreciate the laws of beauty is through the analysis of the objects all about her. She is already interested in the problems of dress and of home furnishings, and through the discussion of the art principles which may or may not be illustrated in these familiar things art will come to take on a vital meaning.

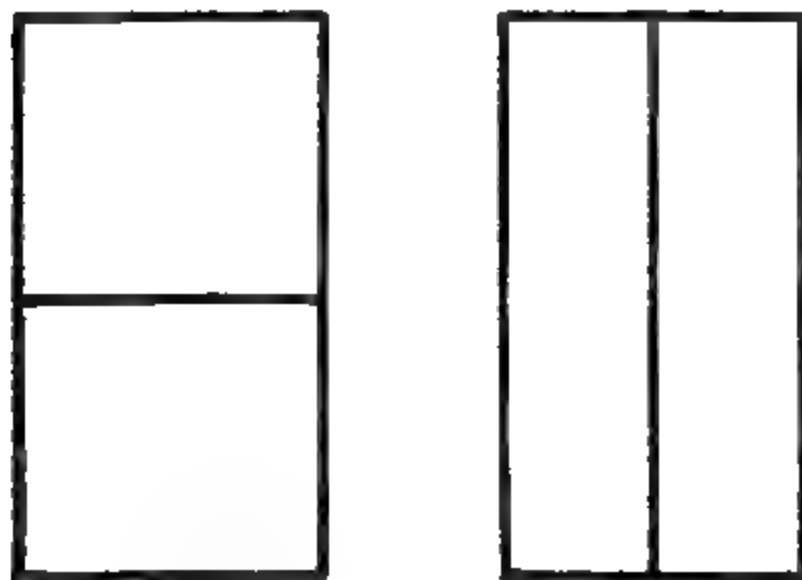
Proportion, or the Greek law of relationship, is the first art principle to be considered. A sense of proportion is in a very large degree an acquired sense. There must be a great deal of critical study before one becomes sensitive to subtle space relations. The student must realize that richness of material does not count at all if art is lacking; for example, a chair though made of cheap wood may be a good chair, chiefly because its proportions are good, and another made of a costly wood may be a poor chair because of bad space relationship. She must see that a well proportioned water pitcher may have the same art quality that a Greek vase possesses.

The principle of proportion is of the greatest importance in dress design; and in passing, let it be remembered that the problem of conservative dress which is concerning women just now, is to a large degree an art problem and depends upon the application of proportion, centers of interest, rhythm, balance, and harmony. In planning a dress design, one should think first of the silhouette and then of the lines within. For good proportion the silhouette or outline of the dress should not vary too greatly from the lines of the figure, for if there is too much contradiction, there is no relationship, and because of this bad proportion there is a lack of conservatism. On the other hand, modesty and good taste demand that the dress shall not follow the lines of the figure too closely.

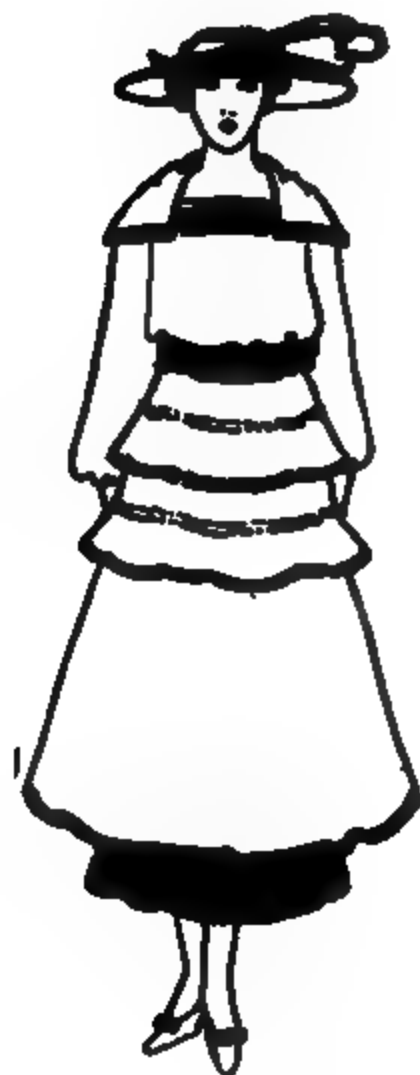
Since various proportions or space relations have the effect of changing the appearance of the face and figure, one must study the outline of the figure to see if there is any variation from the average, and then adjust the lines and masses. For example, the angular outlines of

the too slender figure can be changed, apparently, by a broken silhouette, while one tries for the simpler outline where the figure is stout. With both of these silhouettes, there may be good examples of conservative dress which are at the same time adapted to the figure. If art principles are closely followed the dress will not look queer in a season or two. The student easily recognizes that the vertical lines make her look taller, and horizontal lines, shorter, but she often fails to carry the principle out far enough in planning collars, length of skirt, and waist-lines, for example. She must know that the square collar will have a tendency to make a square face look more square. The length of the skirt should be regulated by the proportions of the figure, and not by the fact that "they" are wearing them eight inches from the ground this season, or four inches as the case may be. A skirt looks shorter with low shoes than with high. Before she leaves the study of proportion, the student must see that too obvious space divisions are monotonous and unpleasant, and that subtle relationships have charm.

The next principle is emphasis or centers of interest. It is easy to over-emphasize, to have too many centers of interest. That is true in some of the paintings of the old Masters. The student can see it easily enough in Raphael's "Transfiguration," where the picture is divided in the middle and her eye goes from one group to the other with equal insistence and does not know where to rest, but she is not nearly so apt to be sensitive to the same lack if she sees it in a home problem. It is exceedingly important for a successful design to have one chief center of interest. In a living room it might be the fireplace or a window with a beautiful view, or a fine picture, but the other centers should be subordinated. It is a violation of the law of emphasis when a house apparently possesses two front doors. A caller will hesitate, then may choose the wrong door, and be ushered through the dining room into the living room. Just a little more emphasis at the front entrance would spare embarrassing experiences. A dress with many embroidered spots has the same effect of over-emphasis, making the eye jump from one place to another. This point can not have too much attention given to it in decorative needlework problems. One must not let one's enthusiasm get the better of judgment. Enough embroidery may be used to add interest, but not to make conflicting centers of interest. In dress it is important to have the center of interest in the right place, near the face, not in a patch of white stocking, between a black shoe and a dark skirt, nor in a pair of white or light shoes worn with a dark dress or suit.



The effect of the horizontal and vertical line in rectangles of the same size



The same figure with dress design showing effect of horizontal and vertical movements in line

No matter how beautiful one's feet may be, the face should be the center of interest.

After proportion and centers of interest, one must think of rhythm, balance, and harmony. Rhythm is easy, consistent movement. A series of jerks, angles, and cross lines which leads the eye along a jagged path makes for restless or distracting movement. The easy movement of the lines of a good Japanese print shows this quality while many rugs and wall papers show its lack. One keeps the idea of movement in mind when hanging pictures. They should not lead away from, but toward a center of interest. Clothes which are so tight that they interfere with the rhythmic movement of the body violate this law.

Balance or rest comes after rhythm. Balance is very closely allied with proportion. If all the proportions are correct one has this feeling of rest or repose when looking at an object. In lamps and vases which have a very small base the lack of this principle is easily seen, but how about the woman with a large hat, heavy furs, and a short, tight skirt? The furniture in the room will not be balanced if the piano and book-cases are at one end, and there is only a small table and chair at the other.

Harmony or unity is the last of these five art principles and in a way may be said to embrace all the others—proportion, centers of interest, rhythm, and balance. There must be harmony in shape, harmony in size, and harmony in the colors used together. The principle which the painter follows in the shapes, sizes, and colors he places on his canvas is identical with that used by the woman when she sets her table, arranges her furniture, or makes a hat or a dress. The first consideration is shape harmony. When rugs and furniture are placed parallel to the walls of the room harmony is established; when they are placed at angles there is no harmony. When dresses are planned to somewhat follow the lines of the figure there is harmony. When waists are compressed to waspish shape, and bustles and leg o'mutton sleeves are worn, the laws of harmony are violated. When areas that differ extremely are put together there is lack of harmony in sizes. A large picture with a tiny one under it or next to it is absurd. In color harmony the student must recognize that there are three factors to be considered, the warmth or the coolness of color, its lightness or darkness, and its brightness or dullness. She will learn by studying good pictures, good interiors, and good dress design that large areas should be subdued in tone and that contrasts should be used only in small quantities. By

studying the people around her the student will see that all can be classified as warm or cool or medium in their coloring. Of course, this is a relative comparison, for flesh tones are always somewhere between yellow orange and red orange, but the hair and eyes have the effect of making the color scheme cooler or warmer. The red haired person, whose coloring is really red orange, is the warmest type and would, therefore, find that the warmer colors harmonize and the cold colors contrast with her skin and hair. Hence she would appear to best advantage in warm hues, as brown, or warm taupes, with cool colors used only as contrasting notes. There is one striking exception, however, for red-violet although one of the warm colors, is unbecoming to the red-haired person. The brunette also who is warm in coloring will be able to wear the colors toward the red end of the spectrum. The brunette with little color can supply warmth by using dull warm tones, and as bright colors have a tendency to put yellow into the face, she must avoid them, except for accents not used near her face. The blonde with a blue-white quality in her skin, blue eyes, and light hair is the cool type and finds the cooler grays, dull blues, dull dark greens, and dull violets more becoming. Tans and grays which are about the same tone as her hair and skin have a neutralizing effect and make her seem all one color, giving monotony rather than harmony. The girl with brown hair and good complexion can wear the widest range of color. Usually she can wear almost any color that is beautiful in itself, if she uses taste in the intensity and values.

The training in art might be accomplished in various ways, but it must always be kept in mind that expression precedes appreciation in art, just as much as it does in music and in literature. No effective teaching substitute has been found for the actual working out of art principles into material. There are many mediums which may be used to this end—pencil, or paint, or cloth, or the selection and arrangement of house furnishings. But whichever is chosen, in the last analysis it will be found that the student must express herself before she is able to gain appreciation.

The experience a Minneapolis teacher had while room-hunting near the University of Chicago promises to become a common one under this type of teaching. The young woman had come to the end of her list with no success and when she entered the last house it seemed hopeless;—red wall paper with huge figures, green rugs with more figures, and the general furnishing corresponding to these backgrounds. How-

ever, it was warm and she was tired and the house was near the campus; so she said she would look at the room. To her amazement she was shown into a delightful room; the walls were of a soft warm gray; a dull green rug was on the floor; simple muslin curtains were at the windows; and a few pieces of bright copper and pottery were on the table and shelf. Several days later a little girl came into the room to sweep, and the young woman had an opportunity to satisfy her curiosity about the mysterious ownership of the room. Imagine her surprise to hear that it belonged to this child. She had had some house-furnishing in school and her mother had given her permission to furnish the room as she wished. This is significant of what we may expect as a general result of this Smith-Hughes plan,—in reality merely a good home economics plan. In short, the whole object of the related art course is to teach art through the problems which the girl will have to meet in her home.

WORTHY HOME MEMBERSHIP

Worthy home-membership as an objective calls for the development of those qualities that make the individual a worthy member of a family, both contributing to and deriving benefit from that membership.

This objective applies to both boys and girls. The social studies should deal with the home as a fundamental social institution and clarify its relation to the wider interests outside. Literature should interpret and idealize the human elements that go to make the home. Music and art should result in more beautiful homes and in greater joy therein. The coeducational school with a faculty of men and women should, in its organization and its activities, exemplify wholesome relations between boys and girls and men and women.

Home membership as an objective should not be thought of solely with reference to future duties. These are better guaranteed if the school helps the pupils to take the right attitude toward present home responsibilities and interprets to them the contribution of the home to their development. . . . Some opportunity should be found to give boys a basis for the intelligent appreciation of the value of the well-appointed home and of the labor and skill required to maintain such a home, to the end that they may coöperate more effectively.—*Cardinal Principles of Secondary Education. Bureau of Education, Bull. 35.*

FOR THE HOMEMAKER

FOOD ON AN ARGENTINE RANCH—LONG AGO¹

As I have mentioned our famous pigeon-pies, when describing the dovecote, I may as well conclude . . . with a fuller account of our way of living as to food, a fascinating subject to most persons. The psychologists tell us a sad truth when they say that taste, being the lowest or least intellectual of our five senses, is incapable of registering impressions on the mind; consequently we cannot recall or recover vanished flavours as we can recover, and mentally see and hear, long past sights and sounds. Smells, too, when we cease smelling, vanish and return not, only we remember that blossoming orange grove where we once walked, and beds of wild thyme and pennyroyal when we sat on the grass, also flowering bean and lucerne fields filled and fed us, body and soul, with delicious perfumes. In like manner we can recollect the good things we consumed long years ago—the things we cannot eat now because we are no longer capable of digesting and assimilating them; it is like recalling past perilous adventures by land and water in the brave young days when we loved danger for its own sake. There was, for example, the salad of cold sliced potatoes and onions, drenched in oil and vinegar, a glorious dish with cold meat to go to bed on! Also hot maize-meal cakes eaten with syrup at breakfast, and other injudicious cakes. As a rule it was a hot breakfast and midday dinner; an afternoon tea, with hot bread and scones and peach-preserve, and a late cold supper; for breakfast, mutton cutlets, coffee, and things made with maize. Eggs were plentiful—eggs of fowl, duck, goose, and wild fowl's eggs—wild duck and plover in their season. In spring—August to October—we occasionally had an ostrich or rhea's egg in the form of a huge omelette at breakfast, and it was very good. The common native way of cooking it by thrusting a rod heated red through the egg, then burying it in the hot ashes to complete the cooking, did not commend itself to us. From the end of July to the end of September we

¹ From W. H. Hudson's *Far Away and Long Ago*. E. P. Dutton & Company, New York, 1918. Pp. 198-202.

feasted on plover's eggs at breakfast. In appearance and taste they were precisely like our lapwings' eggs, only larger, the Argentine lapwing being a bigger bird than its European cousin. In those distant days the birds were excessively abundant all over the pampas where sheep were pastured, for at that time there were few to shoot wild birds and nobody ever thought of killing a lapwing for the table.

. . . . Our dinner consisted of meat and pumpkin, boiled or baked, maize "in the milk" in its season, and sweet potatoes, besides the other common vegetables and salads. Maize-meal puddings and pumpkin pies and tarts were common with us, but the sweet we loved best was a peach-pie, made like an apple-pie with a crust, and these came in about the middle of February and lasted until April or even May, when our late variety, which we called "winter peach," ripened.

My mother was a clever and thrifty housekeeper, and I think she made more of the peach than any other resident in the country who possessed an orchard. Her peach preserves, which lasted us the year round, were celebrated in our neighborhood. Peach preserves were in most English houses, but our house was alone in making pickled peaches: I think this was an invention of her own; I do not know if it has taken on, but we always had pickled peaches on the table and preferred them to all other kinds, and so did every person who tasted them.

I here recall an amusing incident with regard to our pickled peaches, and will relate it just because it serves to bring in yet another of our old native neighbors. . . . His name was Ventura Gutierrez, and he called himself an *estanciero*—a landowner and head of a cattle establishment.

. . . . One of Don Ventura's most delightful traits—that is, to us young people—was his loud voice. . . . And so it pleased us very much when Don Ventura came one evening to see my father and consented to sit down to partake of supper with us. We loved to listen to his shouted conversation.

My parents apologized for having nothing but cold meats to put before him—cold shoulder of mutton, a bird, and pickles, cold pie, and so on. True, he replied, cold meat is never or rarely eaten by man on the plains. People do have cold meat in the house, but that as a rule is where there are children, for when a child is hungry, and cries for food, his mother gives him a bone of cold meat, just as in other countries where bread is common you give a child a piece of bread. However he would try cold meat for once. It looked to him as if there were

other things to eat on the table. "And what is this?" he shouted, pointing dramatically at a dish of large, very green-looking pickled peaches. Peaches—peaches in winter! This is strange indeed!

It was explained to him that they were pickled peaches, and that it was the custom of the house to have them on the table at supper. He tried one with his cold mutton, and was presently assuring my parents that never in his life had he partaken of anything so good—so tasty, so appetizing, and whether or not it was because of the pickled peaches, or some quality in our mutton which made it unlike all other mutton, he had never enjoyed a meal as much. What he wanted to know was how the thing was done. He was told that large, sound fruit, just ripening, must be selected for pickling; when the finger dents a peach it is too ripe. The selected peaches are washed and dried and put into a cask, then boiling vinegar, with a handful of cloves is poured in till it covers the fruit, the cask closed and left for a couple of months, by which time the fruit would be properly pickled. Two or three casks-full were prepared in this way each season and served us for the entire year.

It was a revelation, he said, and lamented that he and his people had not this secret before. He, too, had a peach orchard, and when the fruit ripened his family, assisted by all their neighbors, feasted from morning till night on peaches, and hardly left room in their stomachs for roast meat when it was dinner time. The consequence was that in a very few weeks—he could almost say days—the fruit was all gone, and they had to say, "No more peaches for another twelve months!" All that would now be changed. He would command his wife and daughters to pickle peaches—a cask-full, or two or three if one would not be enough. He would provide vinegar—many gallons of it, and cloves by the handful. And when they had got their pickled peaches he would have cold mutton for supper every day all the year round, and enjoy his life as he had never done before!

This amused us very much, as we knew that poor Don Ventura, notwithstanding his loud commanding voice, had little or no authority in his house; that it was ruled by his wife, assisted by a council of four marriageable daughters, whose present objects in life were little dances and other amusements, and lovers, with courage enough to marry them or carry them off.

A SIMPLE GUIDE FOR PLANNING MEALS

EMMA CONLEY

In charge of Home Economics Extension Division, University of Wisconsin

SEE THAT THERE IS SOME FOOD FROM EACH COLUMN IN YOUR DAILY DIET

| SUBSTANCES NECESSARY FOR GROWTH ARE: PROTEIN, MINERAL MATTER, VITAMINES | | | | SUBSTANCES WHICH FURNISH ENERGY ARE: FAT, STARCH, SUGAR, ALSO PROTEIN | | | SUBSTANCES WHICH FURNISH BULK |
|--|-----------------------------|---------------------------------|----------------------------|---|-------------------------|-------------------------------|-------------------------------------|
| Foods rich in protein | | Foods rich in mineral matter | Foods rich in vitamines | Foods rich in fat | Foods rich in starch | Foods rich in sugar | Bulky foods |
| Complete protein | Incom- plete protein* | | | | | | |
| Milk | | Milk | Milk | Milk | | Milk | |
| Eggs | | Eggs | Eggs | Eggs | | | |
| Meat | | Meat | | Meat | | | |
| Fish | | Fish | | Salmon | | | |
| Cheese | | Cheese | Cheese | Cheese | | | |
| Peanuts | | Peanuts | | Peanuts | Peanuts | | Peanuts |
| Soybeans | | Soybeans | | Soybeans | | Soybeans | Soybeans |
| | Beans | Beans | | | Beans | | Beans |
| | Peas | Peas | | | Peas | | Peas |
| | Cereals | Cereals | | | Cereals | | Cereals |
| | | Greenleaved vegetables | Greenleaved vegetables | | | | Greenleaved vegetables |
| | | Roots and tubers | | | Roots and tubers | | Roots and tubers |
| | | Fruits | | | | Fruits Sugar and syrops | Fruits |
| | | | Butter Suet | Butter Suet Bacon Lard Vegetable fats | | | |
| Bacon | | | | | | | |

*Incomplete protein can supply only part of the protein needs of the body.

Cereals include: wheat, oats, corn, rye, barley, rice, buckwheat.*Green leaved vegetables* include: lettuce, endive, cress, cabbage, Brussel sprouts, beets, dock, mustard, dandelion greens, etc.*Roots and Tubers* include: potatoes, onions, carrots, parsnips, beets, rutabagas, radishes, etc.*Fruits* include: tomatoes, apples, oranges, peaches, pears, pineapple, grapefruit, raisins, dates, figs.

DIVIDE YOUR FOOD DOLLAR INTO FIFTHS

If you buy all your food, of every dollar spent use:

- | | |
|--|-----------------------|
| 20 cents, more or less, for vegetables and fruits. | Group I |
| 20 cents, or more, for milk and cheese. | } Group II |
| 20 cents, or less, for meat, fish, eggs, etc. | |
| 20 cents, or more, for bread and cereals. | Group III |
| 20 cents, or less, for sugar, fat, tea, | } Groups IV and V, |
| coffee, chocolate, and other groceries | |
| | and food accessories. |

If you use "more" for cereals, and "less" for meat, you will not have to spend so many dollars to get the needed food, but you will not find it so easy to provide an attractive and palatable diet.

CHANGES IN THE COST OF LIVING

As reported in the *Industrial News Survey* for April 21-28, 1919.

Since signing of the armistice, changes in the average cost of the different items entering into the budget were:

| | |
|---------------------------|-----------------------|
| <i>All items</i> | 2.8 per cent decrease |
| Food..... | 4.4 per cent decrease |
| Shelter..... | 1.7 per cent increase |
| Clothing..... | 6.2 per cent decrease |
| Fuel, heat and light..... | 1.3 per cent increase |
| Sundries..... | No change |

For the entire period July, 1914-March, 1919, the increases in the respective items were:

| | |
|---------------------------|---------------|
| <i>All items</i> | 61.3 per cent |
| Food..... | 75 per cent |
| Shelter..... | 22 per cent |
| Clothing..... | 81 per cent |
| Fuel, heat and light..... | 57 per cent |
| Sundries..... | 55 per cent |

United States Bureau of Labor Statistics reports "that if a certain amount of food cost \$1 at average retail prices of 1913, the same quantity would have cost \$1.02 in 1914, \$1.01 in 1915, \$1.14 in 1916, \$1.46 in 1917, and \$1.68 in 1918."

THE USE OF WEIGHT STANDARDS IN HANDLING FOOD PRODUCTS

E. H. S. BAILEY

There are still many commodities, not sold in packages, but by the dozen, bushel or quart, that will eventually be sold by weight, since that is the most equitable method for handling them. Jobbers and wholesalers long ago, for greater convenience of handling, weighed these products and translated that weight into barrels or bushels if necessary. In the United States we still hold the old English denominations of weights and measures, instead of adopting the more rational metric system of continental and Latin countries. In a similar way we follow the methods of our ancestors and buy and sell some products by volume instead of by weight, although we admit that the latter is simpler and more equitable for all parties.

The practice of selling potatoes, onions, carrots, parsnips, turnips, beets, apples, tomatoes, asparagus, green beans and peas, and even lettuce, by the pound is being extensively introduced, and many city markets allow no other method of sale. This should become universal. What purchaser who has seen the grocer try to fit a quarter or a half peck of beets, carrots, turnips, or sweet potatoes into a cylindrical measure will not welcome a method of sale that requires that they shall be sold by weight only?

The objection may be urged that we are familiar with the older method and can not readily compute how much we are getting for our money if weights are used. It would only take a short time to learn that a bushel of potatoes weighs 60 pounds; of sweet potatoes, 50 pounds; of apples, 48 pounds; of onions, 57 pounds; of tomatoes, 56 pounds, and so on. And when we buy on a weight basis we shall have a better conception of the real nutritive value of the foods purchased. For the benefit of the purchaser, many public markets post tables of pounds per bushel of most commodities, and a simple computation makes the relative values understood.

This same method of sale should be extended to oranges, lemons, bananas, squashes, cantaloupes, watermelons, celery, eggs, and even ice cream. What the purchaser desires, especially at the present time, when he must know about food values, whether he will or not, is a certain definite amount of the product, *by weight*, for a certain definite sum of money. If the price is too high he can decline to purchase.

There are eggs and eggs, not only in quality and previous conditions of storage, but also in size, or, more properly, weight. The average weight of a hen's egg is two ounces, or about 60 grams. We can not control the fashion with different breeds of poultry as to the size of eggs which they produce, and so, if eggs are sold by the dozen, the hen laying the small variety takes an undue advantage over the hen producing the large eggs. Sell by weight and all this "class discrimination" is avoided.

It is perfectly natural that, since cream is a liquid, and very properly sold by the quart, ice cream, one of its products, should be sold in the same way. The butter factory, however, buys milk by the pound, with a butter-fat test. It will not be a popular innovation to the manufacturer of ice cream to sell his product by the pound, but since the product is often puffed up by the use of other constituents to occupy as much space as possible, would it not be a more equitable method for the purchaser?

We seem to be nearing the point where, on account of the rapidly fluctuating price of wheat flour and other bread stuffs, the baker will be compelled to make only half-pound, pound, or two-pound loaves for family use, and charge so much per pound, even if pennies must be used in making change. Why not have a fluctuation in the price of a loaf of bread, as well as of a quart of milk? There is already a marked tendency to return to the use of the penny, in the interest of thrift and economy. It is very widely urged that the government be requested to coin $2\frac{1}{2}$ -cent pieces for the same reason. The saving of even the half-penny will be welcomed by those who must save to live.

Another argument for strenuously urging the universal adoption of the handling by weight of all possible commodities is that in this way we shall gradually get familiar with the idea that the energy produced by the food when taken into the animal system or the human machine is in proportion to the weight—not the *bulk*—of the food consumed. It will take time to settle this idea in the consumer's mind, but will ultimately find lodgment.

Following this method of buying very naturally will be the gradual realization of the fact that there is a vast difference in nutritive value between foods like the fruits, which contain over 80 per cent of water, and the grains, which contain only 15 per cent. In fact, we shall purchase for actual food value for the energy the material is capable of producing.—*Bulletin of the Kansas State Board of Health, Vol. XIII, No. 10, October, 1917.*

A BABY ARISTOCRACY

Babies today have their own aristocratic circle to which only the most fortunate babies can belong. The Children's Bureau of the United States Department of Labor, in a study lately made, shows that the baby who belonged to the so-called "aristocracy" had a much better chance of living than the baby who could not qualify.

To be a member of the aristocracy a baby had to meet five requirements, selected because the Bureau's studies of nearly 25,000 babies have proved their worth in saving babies' lives.

The father must have earned a fair wage, the mother must not have been gainfully employed either during the year before or the year after the baby's birth; she must have had at least fair medical care when the baby was born; and both father and mother must have been able to read and write. Finally, the house the baby lived in must have been well-ventilated, clean, sanitary, and not over-crowded.

Only 205 of the 1210 babies born alive in a Massachusetts manufacturing city in the year studied could meet these requirements. Fifteen of the 205 died before they were a year old, so that the infant mortality rate for the "aristocracy" was 73, which is 24 points more favorable than the rate for the city as a whole. Of the 1005 babies who could not qualify for the "aristocracy" 112 died before they were a year old, making their infant mortality rate 111—a rate 14 points less favorable than that for the city as a whole, and 38 points less favorable than that for the "aristocracy."

Fifty-five per cent of the babies were barred from the "aristocracy" because their father's earnings were less than the standard established. On the other hand, wages in this city were comparatively good. Trade union conditions prevailed.

The mothers of less than a fifth of the babies were gainfully employed during some part of the baby's first year. In this respect these babies were fortunate, for in a neighboring city two-fifths of the mothers included in a similar study had worked in order to supplement the family income.

Few babies were excluded on the score that their mothers had not had medical care when they were born. On the other hand, the proportion of deaths in the first day and in the first month of life was unusually high. During this early period the baby's chance of life is largely dependent on the care the mother had before the baby was born and at

his birth. This city's most crying need, "seems to be that of an adequate force of nurses to do prenatal work, as well as a clinic where expectant mothers might obtain advice and medical care."

A number of babies were unable to qualify for the "aristocracy" because their mothers could not read and write. The report points out that invaluable sources of information on the care of her baby are closed to the illiterate mother.

Housing conditions were required to meet a fixed standard, also. The greatest mortality was found among the babies who lived in the most congested homes, but the majority of the babies included in the study were comfortably housed. Laws to preclude the possibility of future over-crowding ought to be passed, however.

Although on each point separately the number of babies in unfavorable surroundings is small, yet 83 per cent of babies of this city failed to meet one or more of the requirements, and fell into the larger group where the hazards were greater than among the "Baby Aristocracy."

CHILD HEALTH ALPHABET¹

MRS. FREDERICK PETERSON

A is for Apples and also for Air;
Children need both and we have them to spare.
B is for Butter and Beans and Brown Bread,
Also for Baths before Breakfast or Bed.
C is for Cereals and Cocoa too;
Consider the Calories coming to You.
D is for Dates, the kind that You eat,
Deliciously sweet and far cheaper than Meat.
E is the Excellent Edible Egg,
One daily at least, dear Children, we beg.
F is for Fruits whether fresh, dried or stewed;
Dried, at the Grocer's, you'll buy them, if shrewd.
G is for Gaining, as every Child could;
A half pound a Month is the least that he should.

¹ Reprinted from a booklet by the same name, issued by the Child Health Organization, New York City.

H is for Height, be as tall as you can,
Weight up to Height makes a healthy strong Man.
I is for Iron in Spinach and Eggs,
Builds Red Blood and Sinews for strong Arms and Legs.
J is for Jam, and also for Joy,
Which spread on his Bread it brings to a Boy.
K is for Kitchen so spick and so span,
We all like our Food from a shining clean Pan.
L is for Luncheon served hot in the School;
We wish all the Teachers could follow this Rule.
M is for Milk which makes Muscle and Bone;
Not less than a pint every day till you're grown.
N is for News of Normal Nutrition,
The one way to get into tip top Condition.
O is for Oatmeal, the finest of food;
With Milk for your Breakfast there's nothing so good.
P is for Prunes, Potatoes and Peas,
And Patriots who will be glad to eat these.
Q is for Quiet, we frequently need;
After Meals don't run at the top of your speed.
R is for Rest and Round Rosy Faces;
Rest is a thing which nothing replaces.
S is for Sugar and Syrup and Sweets;
Every Child must have occasional Treats.
S is important and therefore I hope
You'll pardon my specially mentioning Soap.
T is a Topic which Trouble begins;
Both Tea and Coffee for Children are Sins.
U Understanding the best way to live,
United for Service our Country to give.
V is for Vegetables; if you're too slim,
These Victuals are full of Vigor and Vim,
W is for Water, the best thing to drink
Between Meals as often as ever we think.
X is for Xtras of Soup or of Milk,
For a thin little Girl till she's finer than Silk.
Y is for You, and I tell you the Truth,
Learn to be healthy and Strong in your Youth.
Now march for it, Children, with Drum and with Fife,
Z is the Zest which Health gives to Life.

EDITORIAL

What is Waste? An English point of view of what constitutes waste, as expressed in the following quotations,¹ is one to which we may well take heed. Our conception of thrift, now that the war motive is removed, is in danger of becoming a narrow one, and when it becomes narrow it will arouse the old antagonism. If thrift is to be a living thing, if it is to be a reality in our national life, it must be something more than "going without private pleasures now so that we may have them later;" it must mean rather "refraining from individual waste so that we may have energy for common creation."

During the war we learned what waste really is; that it is not merely waste of products but waste of labour. Before the war many never connected the product with the labour needed to produce it. They thought of labour, of energy, as unlimited in amount. Money gave its possessor the right to spend it as he chose. To him who had money to spend, the world was like an automatic machine. You put your penny, or pound, in the slot, and got what you wanted. That was what people meant when they talked about demand and supply. To them the chief, or the only waste was the waste of money, never the waste of labour by the manner in which money was spent. But in the war, we all suddenly discovered that there was more in production than the penny and the slot and what came out of it. There was also labour. This labour was urgently needed for purposes of war, and, at the same time, was strictly limited in supply. It could not, therefore, be wasted in producing unnecessary things for individual consumers. The people who had made for us all kinds of things that we could very well do without, were needed to make munitions and other war-products; and it would be treachery to the country to divert them from that vital task with our private demands. To some extent the Government prevented us from doing that; but we also prevented ourselves. We asked ourselves—Do we really need this? Can we do without it? Are we using up more than our fair share of the energy of the country?

So we rose to a new idea of the nation as all working together for a common purpose; and we saw that it was our duty, not only to use our own energy for that purpose, but also not to divert the energy of others from it. There was

¹Quotations are from a pamphlet entitled *Our Common Purpose*, by A. Clutton Brock, National W.S.S. Committee, London.

for us a double duty, the positive duty of work for the common cause and the negative duty of abstinence. We discovered for ourselves, what the political economists have long been telling us, that money is not necessarily doing good because it "employs labour." The question always is—How does it employ it? We learned that prosperity depends not only on the exchange of commodities, but also on the nature of the commodities exchanged. Moreover, we saw that, in war time at least, a rich man would do better to throw his money into the sea than to employ it in making many men labour to supply his own private and superfluous wants. It has been said that if a German millionaire, living in England and allowed complete freedom of action, had desired to serve his country as best he could, he would have done it, not by spying or even by sabotage, but by employing as many English workmen as possible to build him a palace. We saw that was true of any millionaire, whether English or German, and that it was true also of poorer people. And this we saw because, in the war, the country had a common purpose, in the light of which we judge all production and all expenditure.

Before the war abstinence meant to most of us, if we practised it at all, merely saving, and saving for ourselves. People saved so that they might be able to spend more at some future time. But now abstinence must have a new and better meaning. It is not merely a private wisdom, or a duty we owe to our families; it is a duty we owe to the country. We must not look at our bank books and decide whether we can afford this or that; we must ask whether the nation can afford it.

In this matter of abstinence, if we will, we can all think and act for ourselves. It is often said that no one can define what is a necessary and what is a luxury. That may be true, if the words are regarded as general terms, but each one of us can tell quite clearly what he himself needs and what he does not. He can exercise his own sense of duty on the question, as it concerns himself, without troubling about definitions, and without asking whether his neighbours are doing their duty. Of one thing he may be quite sure, that the more he goes without, the more there will be for others. Nor need the ordinary private man puzzle himself much over the production of necessities. His duty is to go without superfluities, so that the necessities may be produced. What is needed of him is wise spending, that is to say, spending that will not foster the production of superfluities.

Abstinence, thought of merely as abstinence, is a dull, meaningless thing, but if it means happier cities, better houses, music, and all kinds of beauty in our streets, and the wilderness blossoming like the rose, then it is that sharp but glorious discipline which all men must undergo if they are to rise from an animal herd into a human fellowship.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Textiles and Clothing. By ELLEN BEERS MCGOWAN and CHARLOTTE A. WAITE. New York: The Macmillan Company, 1919, pp. 268. \$1.10. By mail of the Journal, \$1.18.

The successful use of "Textiles" by Woolman and McGowan, in college and normal school classes, has created a demand for a simpler presentation of the subject, adapted to high schools. Mrs. McGowan and Miss Charlotte Waite collaborating have responded to this demand and present a new text, which, but for the war would have reached the high school teachers last year.

The authors have reorganized the material in the former book, have amplified it, and have added new features which will be welcomed. The chapter on primitive industries has been omitted and many of the others condensed to cover only essentials of information. There are a number of illustrations which have not appeared before in a text of this kind. Outlines of the contents at the beginning of each chapter stand out for convenience and emphasis. The authors have presented knitted fabrics, as well as woven ones, an obvious need hitherto neglected. The information on bed linens, table linens, carpets, and laces, is a distinct contribution. The tabulation of standard fabrics of cotton, linen, wool, and silk, contains data which should be seized upon by the teacher and made vivid by the identification of those fabrics in the class room. Questions at the end of each chapter will aid the pupil to fix in mind the important points. "Questions and problems for further study" are suggested which will guide the progressive teacher in improving her fund of knowledge. The chapters on

care and repair of clothing, and economics and hygiene of clothing are unusually well written.

It is to be regretted that the starting point for teaching textiles in high school, viz., fabrics in immediate use is not discussed until the fourth chapter is reached; for, in all teaching, and particularly in high school teaching, the psychological approach is more effective than the logical. Reader interest would have been attained by starting with materials with which the high school girl is already familiar, and introducing processes of manufacture later.

GRACE G. DENNY,
University of Washington.

Save and Have. (A book of "Saving Graces" for American homes.) Prepared by the Editorial Board of the University Society. The University Society, New York City, 1919, pp. 142.

This is a small book with a large purpose. This purpose as stated by the authors is "to give in the smallest compass, practical suggestions as to such a careful use of money and things as to enable the reader to have a surplus of money for things worth while."

It uses only 140 pages in the effort to reach its goal. It gives suggestions in accounting as the basis of budget making and shows how to save in the four largest groups of expenditures—food, clothing, operation, and higher life. It gives hints in thrifty purchasing through quantity buying, through true bargains and coöperative groups, through reading labels and knowing the weight of package goods. It shows how good care of clothing, food, and

utensils prolongs their service and saves money.

The basic facts are taken from well-known and in most cases reliable and named authorities. The facts are presented in a new form and often with a subtle humor that attracts attention and drives home the lesson.

One section of special interest deals with the automobile and ways of cutting its expense. Blank forms are given for its daily expense account, a record of tire mileage and monthly and yearly summaries. An illuminating catechism helps the owner of a car to keep a check on its cost.

Another section gives sensible suggestions as to how children may earn money and be taught its value. It especially helps parents to discover possibilities for constructive play in simple materials.

The book gives little that is new, but selections from old material are given with a new emphasis on thrift that is pertinent to the times and its special needs.

The bibliographies might be improved and brought nearer to date.

While the book may be most valuable to the beginning homemaker, the housewife of experience will find much to interest her. The teacher and student will be grateful for the condensation which the book has achieved and perhaps for new light on familiar topics.

S. MARIA ELLIOTT,
Simmons College.

A Manual of Home-Making. Compiled by MARTHA VAN RENSSELAER, FLORA ROSE, HELEN CANON. New York: The Macmillan Co., 1919, pp. 661. Illustrated. \$2.50. By mail of the Journal, \$2.67.

"A Manual of Home-Making" is, as the title states, a compilation of material, most of which has appeared in the valuable bulletins for farmers' wives, sent out in the Cornell Reading Courses. There are also included Farmers' Bulletin 861, U. S. Department of Agriculture, on Stain Removal, and an abridgment of Measurements for the Household, of the U. S. Bureau of Standards.

The book will be especially welcomed as making generally available the Cornell bulletins, since so far they have not been easily obtained except by those living in New York State. These bulletins have various authorships, so that many points of view are represented. The contents of the book are divided into four parts: Part I, The House and Its Furnishing; Part II, Household Management; Part III, Clothing; Part IV, Food and Nutrition.

One questions somewhat the title. Are we losing our distinction between home-making and housekeeping? Should not a manual of homemaking at least suggest the care of children, the general training and the education of the family?

The book is intended primarily for housekeepers, and contains much valuable information, with a brief bibliography at the close of some of the sections.

SARAH J. McLEOD.

A Dietary for Miners. By S. H. BROCKUNIER (Engin. and Min. Jour., 105 (1918). No. 14, pp. 627-630).

Such questions as cost, responsibility for food served, market conditions, wholesale purchase, wastes and leftovers and the importance of adequate storage facilities are discussed, and a dietary proposed which the author states is based on a study of actual conditions interpreted from a dietary standpoint. The net cost of the proposed ration on the Pacific Coast in 1915 was 47 cents per man per day, with an added cost of 22 cents for proper preparation and serving, amounting to a total of \$20.70 per month for food and its service. A sample per man per day ration is suggested for a miner of average weight, as well as general menus, calculated to provide 5058 calories, of which protein would contribute 672 calories. The author in discussing suitability of foods makes some practical suggestions.

The question of lunch baskets is considered and a lunch suggested which is calculated to provide 1440 calories. The need for varying the dishes served by proper rotation for both meals and lunch basket is one of the points insisted upon.

Institution Recipes. By EMMA SMEDLEY.

Published by the author, 6 East Front Street, Media, Pa. Third Edition, 1919, pp. 324. \$3.00. By mail of the Journal, \$3.10.

The preface to the third edition of this book states "In the preparation of this edition it has been possible to test and revise many of the recipes . . . the most important feature of the book is the addition of the caloric value of each recipe and of a single serving of the recipe. The figures taken are usually for the raw foods, which in many cases are much higher than those of the cooked foods. . . . This information should be a great help to the busy dietitian who has little time for computing food values and yet wishes to serve a balanced menu and to know that the family is being sufficiently nourished."

A comparison of the "Contents" in this and in earlier editions shows three new chapter headings—"Cereals Used as Vegetables," "Sauces for Meats and Vegetables," and "Soup."

The chapters on "Organization of the School Lunch" and "Equipment" have been omitted from this edition, as they are to be included in a new book now in preparation.

More Recipes for Fifty. By FRANCES LOWE SMITH. Boston: Whitcomb and Barrows, 1918, pp. 225. \$1.50. By mail of the Journal, \$1.60.

This volume, supplementary to the earlier "Recipes and Menus for Fifty" offers needed help to those engaged in the preparation of food for any number beyond twenty-five. The recipes can be easily divided into halves, and even into quarters. While the book was written for war-times it is still of value because so many war-time recipes have proved so popular that they have come to stay. With wheat back to a pre-war basis, the use of substitutes will to a great extent discontinue, but we have become accustomed to the taste of barley, rye, rice, and the other cereals in our breads, and find they make a variety that we are not willing to let go. The tables on page 12 for substitutes will be valuable in the changing of the substitutes back into the usual ingredients. The suggestions on pages 12, 13, and 14 are valuable in helping to solve the problems of how to use the fats and the left-overs.

ELIZABETH KELLY.

BOOKS RECEIVED

American Charities. Amos G. Warner. Revised by Mary Roberts Coolidge. New York: Thomas Y. Crowell Company, 1919, pp. 541. \$2.50.

Dietaries Suitable for Secondary Schools, Colleges, Hostels, Clubs, etc. Dorothy C. Moore and Charles E. Hecht. London: National Food Reform Association, 1919, pp. 54. Price 1/3 net.

Practical Home Nursing. Louise Henderson, R. N. New York: The Macmillan Company, 1919, pp. 224. \$1.50.

Successful Canning and Preserving. Ola Powell. Lippincott's Home Manuals. Second edition, revised and enlarged. Philadelphia: J. B. Lippincott Company, 1918, pp. 405. \$2.00.

The War Garden Victorious. Charles Lathrop Pack. Philadelphia: J. B. Lippincott Company, 1919, pp. 179. Complimentary.

The Winston Simplified Dictionary. Edited by William D. Lewis and Edgar A. Singer. Philadelphia: The John C. Winston Company, 1919, pp. 820. \$0.96 postpaid.

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Issued by the United States Department of Labor, Children's Bureau:

Infant Mortality. Mary V. Dempsey. Infant Mortality Series No. 8, Bureau Publication No. 37.

Maternity Care and the Welfare of Young Children in a Homesteading County in Montana.

Viola L. Paradise. Rural Child Welfare Series No. 3, Bureau Publication No. 34.

An Outline for a Birth-Registration Test. Miscellaneous Series No. 12, Bureau Publication No. 54.

The States and Child Labor. Children's Year Leaflet No. 13, Bureau Publication No. 58.

Issued by the United States Treasury Department and the United States Department of Agriculture:

Thrift Leaflets: No. 1, Is Thrift Worth While? No. 2, Seven Steps Toward Saving; No. 3, Wise Spending Saves Clothing for the Family; No. 4, Saving Time and Money by Simple Housecleaning.

Issued by the United States Public Health Service:

Keep Well Series: No. 3, How to Avoid Tuberculosis; No. 4, Diphtheria.

The Notifiable Diseases. Reprint No. 498 from the Public Health Reports.

Safe Milk for the Small Town. K. E. Miller. Reprint No. 497 from the Public Health Reports.

Treatment and Disposal of Creamery Wastes. Earle B. Phelps. Reprint No. 496 from the Public Health Reports.

Issued by the Department of Commerce, Waste-Reclamation Service:

Report of an Investigation of the Akron Industrial Salvage Co.

Waste Reclamation: Organization, Functions, and Objects of the National and Local Service.

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Cardinal Principles of Secondary Education. Bulletin, 1918, No. 35.

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Kindergarten Education. Almira M. Winchester. Bulletin, 1918, No. 49.

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Educational Value and Opportunities of Baby Health Stations. J. Sobel, *Arch. Pediatrics*, 35 (1918), p. 468.

Anaphylaxis and its Relation to Some Diatheses Common to Infancy and Childhood. F. W. Shlutz and W. P. Larson, *Arch. Pediatrics*, 35 (1918), p. 705.

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NEWS FROM THE FIELD

The Twenty-first Annual Session of the Inland Empire Educational Association met in Spokane, April 2 to 4. Educators from the entire Northwest together with many eastern men and women were present at the meeting.

The Home Economics Section offered the following program: How to Make Home Economics Work Function, Ava B. Milam, Oregon Agricultural College; Discussion, Effie Raitt, University of Washington; Development of Vocational Home Economics, Dr. Louise Stanley, Federal Board for Vocational Education, Washington, D. C.; Trade and Industrial Education for Girls and Women, Mrs. Anna L. Burdick, Federal Agent for the Industrial Education of Women and Girls, Washington, D. C.

The Vocational Section devoted most of its program to the discussion of Smith-Hughes work. Vocational Homemaking as a School Course was presented by Anne E. Arnold, Principal, Girls' Polytechnic High School, Portland, Oregon.

At the business meeting, Lilian Tingle, of the University of Washington, was elected President, and Mildred P. French, Supervisor of Home Economics, Spokane, Washington, Secretary.

The Tacoma Home Economics Association devoted itself this past year to activities connected with the Red Cross Canteen, Home Service, and Child Welfare. The following officers have served since October: President, Alta D. Beymer; Vice-president, Mrs. Erminie V. Lamb; Secretary-Treasurer, Elizabeth A. Redway.

The Oregon Home Economics Association held their second annual session May 17, 1919, with Ava B. Milam presiding. The program was as follows: How to Make

Home Economics Function, Helen Lee Davis, Oregon Agricultural College, Corvallis, Ore.; Discussion, led by Agnes Craig, Washington State College, Pullman, Wash.; Smith-Hughes Home Economics, Dr. Louise Stanley, Federal Board for Vocational Education; Continuation Classes, Maude Murchie, State Supervisor for Home Economics, Sacramento, Cal.

Some of the Affiliated Home Economics Associations have recently reported newly elected officers. Those not already published in the news columns are as follows:

Cleveland: Adelaide Van Duzer, President; Estelle Stearns, First Vice-President; Elisabeth Parsons, Second Vice-President; Mabel Crossen, Third Vice-President; Lenore Delahunt, Secretary; Kathyne Herbert, Treasurer.

Detroit: Lulu Becker, President; Irene Kenny, Vice-President; Florence Ackerman, Correspondent Secretary; Louise Clawson, Recording Secretary; Joy Blanchard, Treasurer; Charlotte Keen, Councilor.

Indiana State Teachers Assn. Home Economics Section: Geraldine Hadley, President; Lucy B. Hawk, Vice-President; Mary E. Commack, Secretary-Treasurer; Elizabeth Cowan, Councilor.

Kansas City: Martha Rouse, President; Jessie Griffith, First Vice-President; Nell Leonard, Second Vice-President; Frances Backstrom, Secretary; Miss Griffin, Treasurer; Ella Willsey, Councilor.

Michigan: Mary F. Baldwin, acting president; Alice M. Cimmer, secretary; Alice R. Wallin, treasurer.

Greater New York: Martha Westfall, President; Mrs. Edward Thomas, Secretary,

Texas: Laura F. Neale, president; Emma E. Pirie, vice-president; Jessie Rambo, secretary; Mrs. J. M. Harris, treasurer.

Life Members of the American Home Economics Association: Sarah Louise Arnold, Simmons College, Boston, Mass.; Anna Barrows, Teachers College, New York City; Melvil Dewey and Mrs. Melvil Dewey, Lake Placid Club, New York; Louisa A. Nicholass, Mary Hemenway School of Household Arts, Framingham, Mass.; Mrs. Orlo J. Price, Lansing, Mich.; Robert H. Richards, Mass. Inst. of Technology, Boston. Miss Nicholass was made a life member by the Alumnae Association of the Mary Hemenway School of Household Arts.

Practice Cottage, Hood College. Typical of the present movement in home economics education is the practice house recently dedicated at Hood College, Frederick, Md., and known, after the donor, as David Strawn Cottage.

The practice house was designed by the students of the home economics department. The building accommodates 15 students and a teacher with permanent living quarters.

On the second floor there is a sleeping porch large enough to accommodate eight persons.

Indiana University. A unique course for teachers will be given in the Home Economics Department this summer on how to present to school children the subject of "How to Spend Money." This course will be in charge of Helen C. Goodspeed, State Superintendent of Home Economics for Wisconsin. A demonstration class has been arranged for in connection with this course.

The League for Preventive Work in Boston gave valuable help with the food problem during the influenza epidemic. Its Dietetic Bureau, in charge of Lucy H.

Gillett, prepared simple practical suggestions which the social worker could leave in homes where such suggestions could be used intelligently. In other cases the workers at the Bureau went into the homes to give personal advice and to do intensive work. In all except three of these families the mother was spending enough money to buy sufficient food for the family but it was not spent so as to get the needed nourishment. In all cases except one the mothers received and acted upon suggestions eagerly and there was a decided improvement in the health conditions.

Child Survey, Boston. The weighing and measuring campaign for children under 5 brought out last year the fact that 5,000 children in Boston were below normal weight. The child welfare committee of the city has decided to investigate the reasons for this condition, and after the survey to recommend constructive measures.

Home Service Work of the American Red Cross will be continued as a peace time activity, and in some communities, particularly those where there are no other organized agencies for social service, will be expanded to include others besides the families of soldiers and sailors, though these will receive special attention. The present policy will be followed of giving help only to those who ask for it and never going where the offer of assistance is unwelcome. There will be a scrupulous care to avoid duplicating or interfering with the work which is being done for social betterment by any other agencies.

Notes. The New York City Commissioner of Markets is giving courses of lectures to women on marketing, as a means of lowering the cost of living through more intelligent buying.

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THE WAGE-EARNING GIRL AND HOME ECONOMICS¹

ANNA LALOR BURDICK

Federal Agent for Trade and Industrial Education for Girls and Women

The fundamental topics which must receive consideration in any discussion of the subject are: the numbers of wage earners in specified age groups, and the facts concerning each group; who the worker is, what she does, where she comes from, and what can be done for her.

The usual basis of computation is the United States census publications of 1910. This sage and solemn source of indisputable evidence placed the total number of girls and women gainfully employed at 8,075,772. Thirty-three per cent of these were engaged in domestic and personal service; 22 per cent in agriculture; 22 per cent in manufacturing and mechanical pursuits; 15 per cent in trade and transportation; and 8 per cent in professional service.

The war has accelerated the expansion of the employment of women until the most conservative estimate places the total number of working women today at twelve millions. The number of women in domestic service has been rapidly shrinking; the number industrially employed has been correspondingly increasing, until just prior to the war the women formed 16.7 per cent of all workers engaged in mechanical and manufacturing pursuits.

In 1910, one in every four women throughout the country was a worker gainfully employed. In New York City one in every four workers was a woman. The period of service, formerly estimated at from

¹ Presented at the Twelfth Annual Meeting of the American Home Economics Association, Blue Ridge, N. C., June, 1919.

three to seven years, is lengthening. The war has rehabilitated large numbers of middle aged women; and consequently increased approximately 100 per cent the number of married women in employment.

As a labor reserve, woman has become a national economic asset. Not more insistent is the employer in his effort to secure women workers than the women workers themselves are in their earnest efforts to secure suitable employment. Their needs are nationally known to the Women's Division of the United States Employment Services.

In reply to the question of numbers of wage-earning girls and women, we may say then that "her name is legion and her tribe is increasing." Witness the statistics of workers in age groups, (United States Census, 1910, vol. IV, table 26, page 69): Of the total number of girls in the following age groups,

| | | |
|----------------------------|------|--|
| 10 to 13 years of age..... | 8 | per cent (1 out of every 12) is employed |
| 14 to 15 years of age..... | 19.8 | per cent (1 out of every 5) is employed |
| 16 to 20 years of age..... | 39.9 | per cent (2 out of every 5) is employed |
| 21 to 44 years of age..... | 26.3 | per cent (1 out of every 4) is employed |
| 45 years and over..... | 15.7 | per cent (1 out of every 7) is employed |

The first group should be returned to school instantler by rigid enforcement of the Compulsory School Attendance and Child Labor Laws. There is no other remedy.

The second, third, and fourth groups may be reached, respectively, by all day schools for the young girl about to enter wage-earning, by part-time schools for those who are already at work, and evening instruction for the adult wage-earner.

The large proportion of women 16 to 20 years of age engaged in gainful occupation is accounted for by the fact that at this period all the girls are old enough to work, and matrimony has had little effect in decreasing the number of workers.

Among women the highest proportion of gainful workers was in the age period 16 to 20 (39.9 per cent), and the next highest in the age period 21 to 44 (26.3 per cent).

In a recent number of *The Manufacturer's Journal* a letter from a certain town in Louisiana states that in this town of 3500 population there are large numbers of idle women who want employment. The letter asks for some consideration to be accorded this small town when planning a program of industrial expansion. This is but one town among the thousands which present the same problem. From centers urban and rural, from individuals near and far, comes the call for work.

These women form an "Army of Occupations—Wanted." One of the questions which the war asks—for it seems to ask what it does not answer—is: "In the readjustment is the economic asset of these women's labor to be salvaged?"

Who is this wage-earning girl? She is all sorts and conditions—from the child thrust into a working experience at the earliest possible moment the law allows, to the girl of independent means deprived of full participation in life, demanding her chance to live more abundantly and to insure herself against the mischances of fortune. Between these two extremes we meet every type of worker with every type of preparation, but the throng at the bottom of the ladder is great.

Training the girl has always been a matter of confusion in the public mind. Her supposed short service in the world of work tends to emphasize domestic training based upon the value of the home in the community. It is no exaggeration to say that her lack of equipment for bread winning brings even more disastrous results than her lack of knowledge of household arts. As a member of an unskilled, an unorganized group, the girl is an underbidder in the labor market, accepts poor wages, long hours, and lowers the standard of living. Training for a vocation is a valuable training for the future homemakers and can be made to cover all the relations of life.

To get a job, hold it, and advance in it, and make it worth while, and have it make you worth while, is sound philosophy for the shop, the office, or the home. It takes not incidental attention, but planning, organizing, systematizing, and self-sacrifice.

Most people fail to analyze the mental states of the girl worker. She is influenced by the popular belief and expectation that wage earning is not a permanent proposition. She wants to go with the throng, do what other girls do, have what other girls have, and what is more, be seen having it. She is influenced by friends in the choice of school, work, clothes, recreation. She sets the seen above the unseen, the immediate over and against the more remote. She is influenced by the social prejudices towards levels of employment. She is conservative because hampered by the dread of change and shift. She is daring because, having little to lose, she is willing to hazard all and get a new job if necessary.

Classified by age groups, let us picture this wage-earner from 14 to 16. She drops out of school, public or parochial, and neither parents nor teachers know what she faces. How does she get her job? Much

depends on what the other girls of her acquaintance do. Girls are gregarious. She takes work which is socially attractive because the workers are recruited among her friends, or work which is geographically convenient. The neighborhood becomes the source of labor supply.

She may be classified roughly into two groups: First, there is the over-age, over-size girl, physically developed beyond her years and judgment, whose tendency to over-decoration shows that she seeks admiration in general, and an admirer in particular. She leaves school on the pretext of helping at home or feigned illness. If she does not find some Lochinvar of a delivery boy or chap in the nearby garage, as a mate, her desires soon outstrip the capacity of the family exchequer and she turns to wage-earning. She may do housework for a time, but she has size—a marketable asset, which, in itself, opens up opportunities in the fields of industrial employment. She is frequently located in a laundry at about a dollar a day; in the Five- and Ten-Cent Store, at about six dollars per week, where the display of the right thing, at the right place, at the right time, sells itself. She may find employment in miscellaneous mercantile establishments, or, if old enough, at the telephone exchange. In the factory she may be a checker, inspector, a labeler, a paster, a boxmaker, a sorter, a wrapper, a packer, or a filler, according to whether the product is boxed or bottled, dry or wet goods, textiles, or non-textiles. In a department store she may be a bundle wrapper, a cash girl, a stock girl. In dressmaking and millinery shops she is found, in very limited numbers, as messenger or helper. The apprentice girl has vanished, as well as the busy dressmaker who will stop to teach her the simple and essential principles of the trade.

Second, there is the girl who must go to work at once because of economic need. This is not an absolute, but a relative and contingent term. Family ideals set this standard. Her schooling is really not marketable on the "fetch and carry" jobs which are open to her. Her progress depends much on family traditions and neighborhood influences. To keep alive the spark of interest and ambition, to prevent retrogression, to help her think and judge and struggle for the next step in advancement, that is the function which the continuation school can perform for this girl. Since normal family relationships have been upset in the homes from which many of these girls come, the school must prevent tragedies of neglect and indifference by supplying a personal interest, direction, and guidance in establishing wholesome standards of living. The job plus the school influence is a very different thing from the job without it, to the girl of this age.

The trade schools and trade classes were established to lift the girl of limited school expectancy over the unskilled processes which catch and hold the young worker, and enable her to enter employment at a higher initial wage. Here she is trained in the processes, and, through order work, becomes experienced in handling varieties of materials. The dressmaking trade ranks first in the industries, in the number of women employed, and fourth in the occupations, being outstripped by agricultural laborers, servants, and laundresses. Dressmaking and millinery, other than the work of the family dressmaker, represent various stages of industrial evolution and organization, with growing specialization of workers; consequently, we find older women gravitating toward them.

The next group of wage-earners from 16 to 20 years of age, are divided into four classes:

First, the girls who have automatically graduated out of the juvenile jobs, and have maturity and stability to market. These girls have found some progression in the store, the office, or the factory.

Second, the girl who early anticipated matrimony as a station in life and found it an experience. She comes back to work without special training. This girl is found in all classes of work. Hotels, restaurants, cafes, are her haven. She gets her meals as part pay. She can live at home and work part time. In the absence of definite training she tries to "cash in" on her household experiences. Youth is an asset to her as a waitress or a cashier. As she grows older she may follow a descending scale, gravitating through the pantry to the kitchen as a helper or a dishwasher. On an ascending scale she may become head waitress or cashier, and, with the addition of typewriting or clerical training, may pass into other service occupations in the large hotel. Owing to the increasingly large number of women employed in hotels, some assistance may be offered through training. An analysis of the requirements of the worker and duties for the specific occupations would indicate the first steps.

Third, the girl, who, in anticipation of early advent into wage-earning, entered the commercial department of the high school as the quickest way to a pay cheque. The mortality in this department is high. If this girl could combine commercial training with some art training and ability to write clearly, she could be an apprentice in the advertising department of stores. If she could combine some commercial training with ability to sew, she could be placed in part-time work in custom shops. More girls in Washington Irving High School were placed in industrial work on a part-time basis than in commercial work.

Girls as well as boys want some way of earning money while in school. Their poverty or indigence is very evident when sales of tickets for school activities necessitate a consultation at home before the girl can take action.

Certain other occupations akin to industrial work, but ordinarily called clerical, are open to these girls on dropping out of school. They manipulate office machinery, duplicators, addressographs, photostats, comptometers, and become typists in letter shops, and work in printing and publishing houses.

Fourth, the girl who graduates from the high school is likewise included in this group. As a wage-earner she enters the commercial occupations in largest numbers. Teaching assimilates the next largest group. Wage-earning may be deferred by further training. Matrimony does not transfer the attention of these girls to the home in any considerable numbers until after the third year out of school. It is almost a stable percentage in a given community or neighborhood. The war, however, has increased the marriage rate much beyond that of normal times.

The 21- to 44-year group is the next largest and next in importance in industry. This woman showed her stability, adaptability, and capacity, during the war in many new lines of employment. She was not a new worker, but transferred worker. She returns intermittently to the wage-earning experiences of her earlier years. The backbone of a great army of power machine stitchers, dressmakers, and metal trade workers is found here, and is increasingly depleting the army of domestic workers.

The problem of domestic service, or homemaking for wage earning, is a critical one at the present time. The United States Employment Service brings in the report from every section of the country that an unorganized boycott of domestic employment prevails. Its lack of standards in hours, wages, and work have kept it from attaining the dignity of a trade. Training, up to the present time, has been indifferently provided for in day and evening classes in connection with homemaking courses. Homemakers have been exposed to training for twenty-five years, and yet as employers of labor, have not systematized the working day. The Young Women's Christian Association, co-operating with other interested agencies, is beginning to work out a scheme of this work on a trade basis. The American Home Economics Association, with its scientifically trained body of workers, certainly should recognize its responsibility and opportunity for service in

the betterment of working conditions affecting the largest body of women wage-earners engaged in a single occupation.

Under present day conditions the working woman resents the suggestion that she seek domestic service as a means of livelihood, and resents the efforts to draw or force her into it. She is tired of having this ill-paid, trying form of manual labor urged upon her as preëminently woman's field and proper choice, when she knows that in almost any other calling a woman receives not only better pay but more consideration as a human being and has, perhaps, a chance of advancement.

To develop the movement for employment of "home orderlies" or "household assistants," three distinct changes must occur:

First, the education of housekeepers must proceed to a point where they are willing to give proper training to domestic helpers.

Second, a better grade of labor must be attracted into the industry by regulations as to time, length of hours, and specific duties.

Third, an effort must be made to develop the social attitude that this is an occupation demanding sufficient skill and intelligence to be worthy of initial training and compensation.

Seventy-four per cent of the women between the ages of 21 and 44 are in homes. We find many of them utilizing their home experiences as a business asset in developing a clientele for serving meals, garment making and repairing, laundering, cleaning and renovating, nursing.

A number of factory industries have thus outgrown their humble beginnings in homes, notably: Pin Money Pickles of Richmond; Sassy Jane Apron Factory of Los Angeles; Taylor Canning Company of Santa Anna, California. It is interesting to note how many patent medicines have developed to gigantic proportions through this "home-remedy" stage. Aprons, house dresses, children's clothes, and all types of home-made foods are staple products readily marketed. They sell themselves with little pushing. Factory production has developed markets rather than diminished the demand for hand work. A Minneapolis firm, marketing its products almost wholly within a radius of 200 miles, in 1917 sold 13,135 dozen aprons, 13,000 dozen house dresses, 1200 snug wraps. It is interesting to note here that in the manufacture of army shirts it took seven home workers to produce what one factory worker could produce in the same amount of time. The home worker's wage was 14.8 cents per hour and the factory worker's wage was 26 to 36 cents per hour.

The proportion of women workers over 44 years of age steadily declines. At that age the women outnumber the men by about 1,000,000. Life Insurance and Trust Companies show 3,000,000 widows over 65 years of age, largely dependents. Over 32 per cent of them lack the necessities, and 90 per cent the comforts of life. In employment this woman is known as a casual worker.

This brief survey reviews the status of women in various age groups. Reclassifying these according to employment, we have: 1. The child employing industries. 2. Industries employing workers at mechanical and routine processes requiring little skill. 3. Industries requiring varying degrees of skill. 4. Industries where highly skilled work brings the highest industrial opportunity but where the opportunity for securing training is limited. 5. Industries pursued in the home for purposes of wage-earning.

The first group is that affected by recent part-time legislation. To its members the Continuation School must render a personal and individual service. The desire of this girl and her immediate need and her working expectancy will determine what this service shall be. The Employment Management Conference, recently convened in Cleveland, said that the greatest drag in the working world to-day was lack of freedom of choice in employment. It was said with reference to men. It is a right which women also covet—the right to self-determined employment.

If the economic struggle is inevitably paramount the program of instruction should provide for majoring in the improvement of the wage-earning possibilities.

An irreducible minimum of instruction is necessary in the essentials which make for health and hygienic living, suitable food and clothing, and improvement of personal appearance. The National League of Women Workers, with a membership of 20,000 women, is focusing its attention on budgeting the working girls' income. Teachers of home economics in continuation schools must learn the economics of wage earning and realize that it is not socially or economically justifiable to teach girls how to cook their meals over an alcohol lamp, and make shirt waists after a long and exhausting day's labor, in order to make a good appearance on a meager wage.

The employer will be "from Missouri." He must "be shown" that this group of workers is more stable, more efficient, because happier, and interested in their work, in wholesome recreation, and in good citizenship. An open minded employer is a great ally. The teacher who does

this work must be social minded, must not be ashamed of her job, and must show interest in the problems of the employer and employee.

An employer recently visited some home economics classes in a nearby school, which his workers were released to attend. He said the teachers never visited the plant, never asked what the shortcomings of the workers were, what the causes for waste were, what these families had to live on. This certainly was a serious oversight. In another plant recently visited, where continuation classes were held under public supervision and control, the teacher reported that she had taught two years and had never gone out on the floor of the plant to observe the experiences of the young workers. This plant had a school for training its new workers; evening classes in factory organization and production; and cooking and sewing classes, instituted under the local Y. M. C. A. The Management could not get any response from the women in cooking and sewing, and consequently abandoned the enterprise.

Sometimes unusual motives actuate the plants in their desire to institute homemaking classes for recreative purposes. Frequently, in fact almost always, employment managers, superintendents, and foremen have definite theories about women and their habits of thought and action, which influence their opinion of the work they are able to do, or the money they ought to earn. For example, one man was convinced that the policy of equal pay for equal work was a grave injustice to men because for recreation women had their sewing at home, while men had to go out and spend money.

Workers in industries employing women in mechanical and manipulative processes usually have spent their youth in child-employing industries, or at home, and show limitations in interest and outlook. Whatever will interest them and mend the tragedies of their existence should be provided. Quite often these women express a desire for academic education or home training in evening schools, but are unable to go because of the demands upon their physical strength in attending machines for a long working day.

A visit to the day nurseries provided for young children of working mothers in many industrial plants will give a perfectly definite suggestion of coupling up instruction to mothers with the services rendered the children.

The foregoing suggestions apply to all these classes of women workers.

1. Homemaking training must be energizing rather than enervating.

Instruction must be adapted to the attitude of mind of the worker. It is either a joyous job, a necessary activity, or drudgery. It can

become recreative, a business proposition, or a labor-saving device. It must be sold to the worker.

Training should not penalize the worker, either in youth by unwonted emphasis upon it when the wage-earning needs are paramount; or at maturity, by adding it to a working day of already deadening length. The legal hours of employment must be considered.

The employers of men and women who work together are more apt to encourage such classes in plants. Particularly is this true where waste and spending make constant calls for loans to the workers.

2. Industrial training must be remunerative and beneficial to the worker: a. For the employer; it must fit into the scheme of production and profits. The organization must produce more, reduce waste, stabilize workers, and improve the morale of the plant. b. For the employee; it must mean increase in wage with increased production. It must mean permanence of employment and progression in employment, and higher standards of living for the worker.

3. Trade training for the independent worker must bring measurable returns through: a. Greater technical skill, in selection and choice of material, in improved processes, in disposition of the product. b. Better service, in organization and cost accounting, in better methods of handling trade.

In every state some provision has been made for supervision of the teaching of home economics. The supervisors of trade and industrial work in every state, with one exception, are men. It stands to reason that these women will be consulted and asked for advice, particularly as the number of young people affected by the recent part-time legislation in eleven states, will range from one-half to one-third girls. It is their responsibility when occasion makes the opportunity, for them to safeguard intelligently the wage-earning girls' future in these part-time and evening classes. Let the type of instruction be determined by the workers' dominant aim—whether to change to better work; to learn for home use; to help with the daily occupations. This means that the economics of wage earning must mean something more than it ever has to teachers of home economics if they are to be equal to their tasks. They must know more of production than is necessary to be an intelligent consumer. They must know better than they now do what are the problems of employer and employee. They must survey the fields of employment at close range and become sensitized to every factor reacting on the mind of the worker. They will then have some idea "how the other half lives."

ITALIAN COOKERY

EVA MARIOTTI¹

The distinguishing characteristic of the Italian kitchen is patience. *Pazienza* is the word the foreigner hears most frequently from the lips of all classes in Italy.

All meats, except those fried, simmer. Slowly, very slowly they throw forth their juices, and at the same time become tender. One of the most savory stews is cooked in a casserole covered with an earthenware dish filled with cold water. As soon as this water begins to steam it must be thrown away, and the dish refilled with cold water. This process continues for two hours and a half. The result is epicurean, but an American cook would doubtless "give notice" if required to serve it.

My first glimpse of an Italian kitchen was in beautiful Florence. At intervals, on a May afternoon, my attention had been drawn to the tinkle of a bell in a remote part of the house, which had once been a convent. Curiosity induced me to follow the sound and led me to the kitchen, where I found a roast turning merrily on a spit, provided with a clock attachment which rang an alarm when the spit stopped turning to attract the attention of an absent-minded cook. Beneath the spit was an iron dish to catch the gravy which bears the witty name of the *ghiotto* (the greedy one).

The Florentine range is a long stone slab, usually covered with blue and white tiles, containing holes a foot square with a grate for charcoal which must be kept ignited by the frequent use of a turkey feather fan.

Another characteristic of Italian food is harmony, corresponding to atmosphere in art. Sliced ham is served with fresh figs to bring forth their flavor, and cheese is always eaten with pears, for the same reason. A popular saying goes to prove that even a peasant need not be told how good pears are with cheese.

*"Al contadino non gli si fa sapere
Quanto sia buono il cacio con le pere."*

Peaches are soaked in white wine at the table. Strawberries are never eaten with cream, nor washed in water. They are washed in wine and served with claret or lemon juice and sugar. The small, wild

¹ Signora Mariotti is an American woman who married an Italian artist and has lived many years in Italy. She formerly was a resident at Hull House and has recently gone to the Henry Street Settlement to work among Italians.

strawberry brings a larger price than the cultivated berry, which is called "garden" strawberry. There is a strange prejudice against blackberries and watermelons; they are never served at table. Blackberries are bought by chemists and made into a pulp considered good for sore throat, and melons are sold in the streets to picturesque urchins at a penny a slice, the man behind the cart brandishing a huge knife and shouting out that his fruit is fresh and that it bears the colors of Italy, red, white, and green!

The subject of Italian cheeses, made in different cities, is fascinating. Cremona is almost as famous for her cheese as she is for her violins. Parma produces the huge deep yellow forms called *Parmigiano* which we grate on macaroni. Urbino makes a small, round, white cheese, only to be had in spring, and inexpressibly good. A raw bean called *fava*, is served with it at table. The English name for these beans is horse beans. They come on the table in their long thick pods for each person to shell for himself. When cooked they become brown in color and have a bitter taste.

Milan, surrounded by her rich pasture lands is the home of many varieties of cheese. *Gorgonzola* and *Groiera* are made there, and one called *Millefiori* (a thousand flowers), also *Stracchino*, yellow as gold, and soft as butter, a queen of cheeses.

In Rome we have the famous *ricotta*, a cottage cheese made from unsalted goat's milk. It is brought into the city every morning in reed baskets, turned out upon a board, the snow white forms still bearing the impress of the basket, and looking very like piqué sunbonnets. *Ricotta* is eaten with pulverized coffee and sugar, or made into a pudding flavored with rum or *marsala*.

Those who know Rome will remember some of the melodious cries that echo through her narrow streets, such as that of the man who sells *giuncata fresca* (junket); the *cialdoni* man who peddles whipped cream served in pastry cones, as ice-cream is sold to children here; or the fruit vendors, the orange man calling *Portugalli* because once upon a time oranges came from Portugal, and the cherry man with his heaped up cart of black and red fruit from Ravenna and Arezzo. He does not mention the word cherry in either the soft Tuscan or Roman speech, *ciliegie* or *cerase*) but calls lustily *Ravenne* or *Arezzo fino*, as he walks along.

In winter men sell hot baked apples about the streets. The man who passed through our street twice daily, sang out the words *mele cotte*

pettorali (cooked apples for the lungs). Only at this season can be seen the large cake made of chestnut flour called *migliaccio* in Florence and *castagnaccio* in Rome. It is mixed with oil and water, without yeast, and sold at a penny a slice to school children. It does not look attractive; but made at home, with raisins and *pignoli* (pine nuts) sprinkled through it, it is fairly good, but is more like pudding than cake.

There is no country where bread is more venerated than in Italy. There it is still considered the "staff of life," and all food brought upon the table is referred to as *companionatico* (with bread). One member of a family will ask another, "What have we for *companionatico* today?" Bread is almost never made at home, but bakeries abound, and the bakers can be seen in their free hours, unclothed to the waist, cooling off at their shop doors. The loaves are usually round and flat, crisp and light, and unsalted, though Vienna bread and rolls are served at hotel tables. Pisa is the city said to excel in the making of bread.

The peasantry live chiefly on corn meal, either as *polenta* (mush) or made into a flat cake, without yeast, and baked on the hearth between two red-hot stones. It is called *crescia* from *crescere* to grow or swell.

Those are fortunate who have salt to mix with the dough, for in Southern Italy the peasants are often too poor to buy salt. I once had a maid who had never tasted it!

Salt, like tobacco, is a government monopoly. The present King, with the keen insight into vital questions which distinguishes him, has tried ineffectually to remove the tax on salt. A few years before the war he suggested to Parliament the removal of the tax for a year, promising to make good the deficit from his own private income, but his offer was rejected.

The Tuscan and Umbrian peasantry live almost exclusively on *minestra*. The word is usually translated *soup*, but it is made of vegetables without stock. In the long summer afternoons the children on the *podere* (farm) bring in armfuls of beet-root, cabbage, *broccoli*, or potatoes to be cut into small pieces and boiled in water, into which is put what is called the *batutto*, a most important addition, consisting of a small slice of pork or lard chopped very fine with an onion, and some parsley called *erbetta* or "the dear little herb." To this is added a spoonful of *conserva* (the thick paste dried on wooden trenchers in the sun, in the season of ripe tomatoes). This *minestra* or *minestrone* has noodles or rice added on gala occasions and always grated cheese sprinkled over it. The cheese used is *pecorino* made from sheep's milk as the name implies, and is strong in taste.

Never, except at Christmas and during the haying season, do the peasantry eat meat or drink wine, yet they are a hardy race with vast powers of endurance as shown in their splendid resistance to the cold of the Dolomites in the recent war.

The Italian peasant still works under a feudal system. The man and wife who have a large family of children, have no difficulty in finding a farm, for which they pay no rent. They do not receive wages, but have a fixed share with the owner in the product of their labor. They are, however, required to pay half in the purchase of the live stock, and, should an animal die, they share the financial loss, which is often so serious a blow that the peasant is obliged to contract a debt with the master from which he never recovers. Therefore, the beautiful white oxen, who help him till the soil, receive the greatest care; no tramp is ever allowed a night's rest in the clean straw of the barn, and at the slightest sign of indisposition, the veterinary is called. Once, my husband was painting a pair of these milk-white oxen beneath the olives, and the Tuscan peasant came one morning to say that they could not pose, because it had rained heavily in the night, and the cattle would take cold if they stood in the damp.

Unfortunately for the peasant, his dealings with the owner of the farm are conducted through a go-between called a *fattore*; this person is usually unprincipled, with the sole thought of feathering his own nest at the expense of both parties. For this he has ample opportunities, for there are years when the crops fail, when a blight comes to the olive orchards or to the waving corn fields, and the peasant is forced to borrow money from the owner, whom, perhaps, he has never seen, and submit to whatever business transaction the *fattore* sees fit to impose.

The childless peasant cannot easily find a good farm, for there are no fences in Tuscany or Umbria, save a few picturesque hedges, and there are sheep and pigs to be herded by small modern *Giottos*, or wee girls knitting their father's socks as they keep the geese from wandering into their neighbors' fields.

The lack of grass in Central Italy is a serious question for the cattle. As the fields and meadows are arid in July and August, the leaves are stripped from the trees and given as fodder. It is an interesting sight to see the girls and boys clinging to the branches, and throwing the leaves into a canvas bag hooked to the tree. The very top branches are inaccessible, thus giving the stripped trees the appearance of feather dusters against the sky, as painted in the landscapes of Perugino. I

think it is not generally known that all Italian villages, however small and remote, have two physicians and a veterinary supported by the town. They are called *medici condotti* and the inhabitants are not required to pay anything for their visits. But the peasant has a grateful soul and the wife of a surgeon told me that her table was bountifully supplied with chickens and fruit from her husband's patients in the country round about.

No discussion of Italian food can be complete that omits the so-called national dish *maccheroni*. Like many other things about Italy it is misunderstood over here. Macaroni is only *one* kind of what is called *pasta*. There are many varieties, each taking its name from a resemblance to something in common use. For instance: *spaghetti* from *spago* (string), literally translated the dear little strings; *fettucini*, narrow tape; *capellini*, fine hairs; *vermicelli*, dear little worms; *cannolicchi*, little tubes; *rigatoni*, heavy lines; *penne*, pens; *lumachine*, snails; *grandini*, hail; and *cappellette di Bologna*, hats, the crowns stuffed with chicken, ham, and spices and eaten at Christmas in chicken broth.

These varieties are made in a factory, dried in the open air, and sold by the pound. But all private families make the so-called *pasta fatta in casa* (home made macaroni) on Sundays and holidays. Flour is heaped on a kneading board, into which eggs are broken to be worked into the flour with a light touch, the rule being an egg for each person. This is rolled out as thin as pie-crust, and spread on a sheet to dry. The critical moment is when it is ready to cut; if too dry it is brittle and breaks, if too moist it sticks to the knife. It is then rolled like a jelly roll and cut rapidly into any width desired, shaken out and plunged into *boiling* salted water. As soon as it rises to the surface it is cooked, and should be drained immediately and dressed with butter, grated cheese, and tomato sauce in summer, and with gravy and chicken giblets in winter.

The Italians serve many vegetables that we have in this country, but do not use. They gather baby squashes, called *zucchine* in Florence, and *cocuzze* in Rome; they are boiled for salad, stuffed with tuna fish and baked, or cut into slivers, without the seeds, and fried in the perfect olive oil, characteristic of the Italian cuisine. The flowers of the squash are also delicious fried. I have eaten them stuffed with sardines.

Many Italian food stuffs can be had of dealers in our large markets here. There is a pale yellow bean called *cece* known here as pea-bean. They must be soaked overnight, and make an excellent purée, with the addition of a very little oil, rosemary, and onion.

But the bean dear to the Romans is the *lentil*. The poet Martial who lived A. D. 43, mentions it in his famous distichs, placed at the side of each guest at a dinner party in ancient Rome. He writes: "If the pale lentil boils for you in the red earthenware pot, you may often decline the suppers of rich patrons," and again, "These radishes which I present to you, and which are suited to the cold season of winter, Romulus still eats in heaven."

For this toothsome product of ancient Egypt—the lentil—Esau sold his birthright, and Daniel fed on it in preference to the food provided him from the King's table. Lentils are small and flat, much the color of the soil, from which they must be well cleansed before washing, then soaked in the water in which they are to be boiled, because they contain iron in quantity. As a purée they are excellent, but stewed with chopped celery, they persuade one to regard Esau's choice as pardonable.

As a nation we throw away much food that is made into savory dishes in Europe. Pig's liver rolled in bread crumbs, mixed with grated cheese and sage, then wrapped in pieces of the caul of pork, and fried, is a delicious dish.

Another plate is called *Saltimbocca* (jump down your throat). It consists of thin slices of veal, each covered by a small piece of ham and a bay leaf, held in place by wooden toothpicks. *Frati* (monks) are made of chopped beef tied into a cabbage leaf.

Somehow, housekeeping in Italy seems less complicated than it does here. No butcher or grocer keeps a wagon. Your cook sallies forth each morning with her basket on her arm in Florence, or a large gaudy handkerchief in her hand in Rome, supplied with money for which she must render an account to the last centime when the change is spread on the kitchen table upon her return. Like everything human this custom has its disadvantages. Should the cook be attractive, she takes a very long time to do the *spese* (buying). Then, most servants make the *incerto* (uncertain gain), that is, they quote false prices.

The advantage of Italian marketing is that food can be bought in small quantities, such as the breast of a chicken or one wing. As no one has a refrigerator, food is never provided in great abundance, thus reducing the housekeeper's problem of left overs.

It thrills me that this tired old world is taking such a deep interest in the food question. Yet I tremble lest some may come to favor the exclusive use of meat lozenges and soup pellets to be swallowed standing!

It is a far cry from the days of the dinner parties of Lucullus, whose recumbent guests fed on peacock tongues, to the Broadway automatic lunchroom! But in between come the great banquets depicted in the lovely old paintings of the past, Tintoretto's "Marriage of Cana" in Venice, and Paul Veronese's huge picture in the Louvre entitled "The Supper in the House of Levi," reminding us that grace, wit, and beauty adorn and uplift the partaking of food.

THE RELATIONSHIP BETWEEN THE STATE SUPERVISOR OF VOCATIONAL EDUCATION AND THE CITY SUPERVISOR OF HOME ECONOMICS¹

MARTHA H. FRENCH

State Supervisor of Smith-Hughes Schools, Michigan

The Smith-Hughes Law, enacted to promote vocational education in specified fields, sets certain definite boundaries for the control of work to be subsidized under the law. It provides for a Federal Board for Vocational Education which shall act as a governing and administrative body in interpreting the law. Each state voting to accept this grant must have, designated through legislative authority, a State Board of Control for Vocational Education, whose duty it is to formulate plans of procedure for the various types of work to be done, and to administer all funds coming to the state from the Smith-Hughes appropriation. Through this board the State Plan for Vocational Education is set up and presented to the Federal Board, and, when accepted by it, the state becomes entitled to the benefits of the law. It then becomes the duty of the State Board to appoint administrative officers to carry out its policies, and one of these officers is the State Supervisor of Home Economics.

In general then, the state supervisor is the agency through which the State Board of Control gains its knowledge of the progress and achievements of the schools of the state, and at the same time the agency through which the schools of the state become informed as to the policies and requirements of the State Plan for Vocational Education. The official

¹ Presented at the meeting of the American Home Economics Association held in connection with the Division of Superintendence, N. E. A., Chicago, Feb., 1919.

bulletin, Organization and Administration of Home Economics Education, sent out by the Federal Board to acquaint workers with the information it contains, states the duties of the supervisor as mainly coming under two heads: 1. To assist teachers who are already in service, and to assist communities which have already started something in the way of instruction along vocational lines, or who are desirous of instituting a program of vocational instruction. 2. To inspect and check up the work done in the schools of the state. It further says that to fulfill these duties satisfactorily the qualifications for a state supervisor should be at least those demanded for teachers of this subject, with the added requirement of two years of successful experience in teaching home economics. Besides this, she should have had administrative experience, and have studied school organization. She must be qualified by training and experience, then, to encourage and stimulate, to advise and assist, to inspect and suggest, to approve and disapprove the work of the schools in her province which is her state.

Were we to analyze the duties of the city supervisor, and her necessary qualifications we should find them almost identical with those outlined for the state supervisor. In her city, she is the person who keeps the contact between the Board of Education, or its administrators, and the schools of the system. She too must carry information to her teachers as to policies and requirements. She must encourage, stimulate, advise, assist, approve, and disapprove. Though her field is smaller, in some ways her task is greater than that of the state worker, for she must know her conditions more definitely.

What shall be the attitude of these two workers, each with the same aim for her own territory, toward each other? The largest factor in the relationship is coöperation. Each may aid the other and both are indispensable for the best interests of the subject. Just as the state supervisor is responsible to the Federal supervisor, or agent, for the Smith-Hughes schools of the state, so the city supervisor is responsible to the state supervisor for the schools of her city. Visits to the schools of the state are made by the Federal agent in company with the state supervisor, and suggestions and criticisms are made. In the city, visits are made by both supervisors in the same way. They work together.

Many things have combined to make the old routine in home economics teaching a thing of the past. *Cooking* and *sewing* no longer constitute the sum total of accepted material along this line. The

Smith-Hughes law sets a broader conception. The period of struggle through which the world has just been passing has opened our eyes to the emphatic need of training in wise spending, in knowledge of the comparative values of the necessities and luxuries of life. It has brought home the need of a consideration of the social phase of the subject in connection with the family, and with the larger group of society. In fact, home economics has come to mean to the *majority* of its workers what it has long meant to the *minority*, namely, the study of a group of subjects and activities centering around the home. The supervisor of broad vision is constantly working to keep this thought alive in her schools and to make its results apparent in the homes of her students, and as many more as possible. The city supervisor, knowing her territory even more definitely than does the state supervisor may see even more definite results in the homes, and may offer valuable suggestions to the state supervisor who comes into contact with the homes less often and less intimately. On the other hand, the state supervisor meets a larger group and a more diversified need and may aid the city supervisor by fresh suggestions and inspiration from the outside group. Often the most interesting experiences come from the isolated group, and may aid in solving a particularly difficult problem in the city.

On occasions, the state supervisor may act as a buffer between a city supervisor and her principals or superintendent, or between a city supervisor and the Board of Education—and their wives—for with all due respect to the wives, be it said that they are often quite a problem in connection with home economics departments. Their experience no doubt is valuable, but even valuable experience may be marred by lack of the knowledge of school organization, and young teachers may not know what causes the friction. Both state and city supervisors serve a common purpose in that they aid and inspire the young and inexperienced teacher, and they may supplement each other in this field. A most crying need in the educational world today is for the improvement of the teacher already in service. Young, inexperienced girls struggling with the weight of the world on their shoulders, may be saved from ruinous discouragement by a little timely assistance in the organization and management of their problem. Oftentimes, the inexperienced teacher needs only to have the assurance that her superiors have faith in her ability to bring to her the self-confidence which spells success. Another means of aiding teachers which is open to both state and city supervisors is that of working out curricula. These should be elastic

enough to provide for variations of types of students and yet be definite to the point of restraining scattering work. To put her work across is naturally the aim of every teacher, and the suggestions and limitations of a well formulated course of study may be of great assistance in doing this.

The state supervisor is much more dependent upon the city supervisor's loyal support than seems evident upon first thought, for it is the people within the various schools who must put into the every day work suggestions and ideas of the state workers. She must be free to suggest, and if necessary to criticise adversely the work being done. Her field must be clearly defined as giving her authority in all schools which are being maintained under the Smith-Hughes law, whether these are within the province of a city supervisor or not, but she should have tact enough to modify suggestions when possible to meet the desires of the city supervisor. Of course, the law stipulates some very definite requirements, and from these the state leader has no right to deviate, but where there is a chance for judgment, she should ever be glad to accept the ideas of a city leader. Neither of these workers can afford to perform her duties with less than her utmost skill as each is responsible, for doing her best, to those in authority who have placed her in her position. They must work hand in hand, shoulder to shoulder, each suggesting, each accepting, each recognizing the province of the other, and above all, each doing her utmost to put the message forth so that it will really function in the homes and lives of those who are studying home economics.

While this article has mentioned only the city supervisor and schools in connection with the state supervisor of home economics and her work, yet analogies regarding the other schools of the state may easily be drawn. Here is a work of aiding and upbuilding, and whether it be done with the cup of cold water or the portion of bitter medicine the thought back of it should be the same—the development of work in our schools which shall build for better homes.

RATIONING THE FIRE SUFFERERS OF MINNESOTA

LUCY CORDINER

University Extension Service, University Farm, St. Paul

Late in October, 1918, the Home Demonstration Agent of St. Louis County wrote to the Agricultural Extension Division of the University of Minnesota, asking that a scheme of rationing be devised that could be used for those fire sufferers who must receive food throughout the winter from public channels. It was essential that the scheme be sufficiently complete to be used by people who were not food specialists as it might be impossible for a sufficient number of home economics workers to be detailed for the work of compiling the dietaries.

Winters in northern Minnesota are extremely cold, often complicated with wind. The men whose land was burned would be obliged to work out of doors, clearing the land, salvaging whatever timber might be deemed useful, and building to replace the houses and other buildings destroyed. In the majority of cases the women and older boys of these farms work with the men; consequently, the ration would be of large caloric value. Therefore, a dietary approximately 5500 calories was planned for the men and boys above fifteen years of age, and 3500 calories for the women and boys and girls above twelve years of age. The children below twelve were planned for according to their age, allowing in every case the maximum.

For the first few weeks after the fire, supplies were furnished by the American Red Cross, and later the Minnesota Fire Commission took over the responsibility of supplying these people with food.

The workers who compiled the ration spent the months of November and December in the burned area. Families in St. Louis and Carlton County were visited and their habits and needs observed. The commissary department was also visited with a view to learning what foods the people asked for and preferred. St. Louis County was supplied from Duluth, the Armory there being used as headquarters, and furnishing ample quarters for all departments of relief work. In Moose Lake supplies were furnished not only to the people of that village and the country closely adjacent, but also to the villages and districts around Automba, Lawler, Kettle River, and Sturgeon Lake. This meant that a large supply of food of all kinds must be kept constantly on hand in the local grocery dispensary, as over 600 families had to be provided

for. Because of the season and inadequate railroad facilities, there were times when the supplies were wholly inadequate, and the supply of one or another commodity would be entirely exhausted, sometimes several days before a restock arrived. The most serious deficiency was flour, which had frequently to be doled out in bulk, each family receiving a few pounds, the shortage being made up with ready-to-serve cereals, and with baker's bread. There was always a good supply of baker's bread because there were state troops in the district up to Christmas. When flour did arrive in carload lots it was a pathetic sight to watch the men and women run to the cars, receive a sack and carry it quickly to their wagons or other conveyances. Fresh meat was even more scarce and the quantity wholly insufficient to meet the needs. Occasionally there were supplies of corned beef, in bulk, of salt pork, and of salt fish. The principal meat, however, was canned, canned corned beef and canned salmon. The salmon was very popular and as families were abnormally large, because unburned houses were shared with as many neighbors as could be crowded together, the requests for some types of food were at times startling. One man took home with him fifty-four cans of salmon, and a woman requested three dozen cans of soup. These were foods not generally used prior to the disaster, but introduced through the generosity of producers, and liked because they entailed no work in preparation. Vegetables and milk were also obtainable only in cans, and the variety was not very great.

The psychological effect of the food shortage together with a shortage in household furnishings was marked. Occasionally men or women lost their poise, began to pity themselves, and were suspicious of their neighbors, who were possibly receiving, they thought, an excessive quantity of supplies. The results were that they came frequently to town and the time lost was apparent in the building operations.

It was evident too, at an early date, that there must be a change in the type of food supplied and the quantity must be stabilized. A large number of the fire sufferers contracted influenza, and the mortality was very high. Those who survived must have nourishing food and others who were showing effects of a restricted diet must receive one more generous and corrective. Consequently efforts were made to obtain root vegetables, in carload lots, and the people were urged to reconstruct their root cellars so that they might receive as large a supply of vegetables as was obtainable and keep them in good condition. There was every evidence that the recipients were glad to return to their former

food habits. Fortunately cabbage and onions were among the most popular winter vegetables, and these were abundant throughout the state because the crop was large.

The outlook from all homes was necessarily depressing. The beautiful forests had been destroyed, and many of the burned trees were prone. The houses were very tiny, 16 feet by 24 feet being the size of the largest, although the Commission later allowed a kitchen annex to families which were very large. There was no form of entertainment, no diversion of any kind, and for psychological reasons it was necessary that the dietaries cover as large a variety of food as was compatible with the means at hand. For this reason also, it was deemed unwise to hold strictly to caloric requirement when the only pleasure was that of eating. Consequently the ration was large.

Eggs and cheese were conspicuous for their absence in the dietaries. This was made necessary because of the price. Many of the people succeeded in getting a few hens and had their own supply of eggs.

When the family dietary was explained, the people were urged to use fresh meat and fresh fish, and only one pound of salt pork per week was

Weekly ration for adults

| | MAN | WOMAN | MAN AND WIFE |
|--|---------------------|---------|-----------------|
| Butter..... | 1 lb. | 1 lb. | 2 lbs. |
| Cereals (oatmeal, cornmeal and rice)..... | 3½ lbs. | 2½ lbs. | 6 lbs. |
| Fat..... | 1 lb. | 1 lb. | 2 lbs. |
| Flour..... | 7 lbs. | 5 lbs. | 14 lbs. |
| Fruit (raisins, apricots, apples, and prunes)..... | 1 lb. | ¾ lb. | 1½ lbs. |
| Meat and fish..... | 4 lbs. | 3 lbs. | 6 to 7 lbs. |
| Milk..... | 2 qts. | 2 qts. | 4 qts. |
| Dried beans or peas..... | 1½ lbs. | ½ lb. | 1½ lbs. |
| Potatoes..... | 24 lbs. to ½ bu. | 15 lbs. | ½ to 1 bu. |
| Root vegetables, onions, and cabbage..... | 12 lbs. | 10 lbs. | 22 lbs. |
| Sugar..... | ½ lb. | ½ lb. | 1 lb. |
| Syrup..... | ¾ lb. | 10 oz. | 1½ lbs. |
| Coffee..... | ½ lb. | ½ lb. | ½ lb. |
| Cornstarch..... | | 1 lb. | ½ lb. |
| Salt..... | ½ lb. | 1 lb. | ½ lb. |
| Pepper..... | ¼ oz. | 1 oz. | ¼ oz. |
| Vinegar..... | ½ pt. | 1 qt. | 1 pt. |
| Yeast..... | 2 cakes | 1 pkg. | 3 cakes |
| Baking powder..... | 4 oz. | 1 lb. | 6 oz. |
| Baking soda..... | 1 oz. | ½ lb. | 2 oz. |
| Soap..... | 2 bars | 10 bars | 4 bars |

Weekly ration for children

| | 9 TO 12 YEARS | 6 TO 9 YEARS | | 4 TO 6 YEARS | 2 TO 4 YEARS |
|--|------------------|-----------------|-------------------|---------------------|-----------------|
| Butter..... | 8 oz. | 8 oz. | Butter..... | 8 oz. | 8 oz. |
| Peanut butter..... | 4 oz. | 3 oz. | Cereals..... | 1½ lbs. | 1 lb. |
| Cereals (oatmeal, corn- meal and rice)..... | 2½ lbs. | 2 lbs. | Flour..... | 2 lbs. | 1 lb. |
| Fat..... | ½ lb. | 2 oz. | Dried fruit..... | ½ to ¾ lbs. | 14 oz. |
| Flour..... | 4 lbs. | 3 lbs. | Meat or fish..... | ½ lb. | ½ lb. |
| Fruit..... | ½ lb. | ½ lb. | Milk..... | 7 pts. to 7 qts. | 7 qts. |
| Meat and fish..... | 1½ lbs. | ½ lb. | Potatoes..... | 5 lbs. | 2 lbs. |
| Milk (never less than 1 cup per day)..... | 7 pts. | 7 pts. | Vegetables..... | 2½ lbs. | 1½ lbs. |
| Dried beans or peas..... | ½ lb. | ½ lb. | Sugar..... | ½ lb. | ½ lb. |
| Potatoes..... | 12 lbs. | 10 lbs. | Syrup..... | 8 oz. | 4 oz. |
| Root vegetables, onions and cabbage..... | 7 lbs. | 4 lbs. | | | |
| Sugar..... | ½ lb. | ½ lb. | | | |
| Syrup..... | ½ lb. | ½ lb. | | | |
| Salt..... | 3 oz. | 2 oz. | | | |
| Pepper..... | ½ oz. | ½ oz. | | | |
| Vinegar..... | ½ pt. | ½ pt. | | | |
| Soap..... | 1 bar | 1 bar | | | |

SUBSTITUTIONS AND EXPLANATION

Peanut butter may take the place of ½ the butter in individual rations. Any kind of margarine may be used in the ration of adults.

Fresh fish may be used, 1½ times the weight of meat.

Canned fish may be used as fresh fish.

Dried meat of any kind, ½ weight of meat.

Evaporated milk is ½ the measure of whole fresh milk.

Substitute canned corn, peas or beans for dried beans or peas,—1 can for ½ lb. of dried legumes.

Substitute tomatoes for turnips—1 can of tomatoes for 3 lbs. of the other vegetable.

Do not make the vegetable substitutions more than once a week.

The small size of the potatoes in northern Minnesota accounts for the large ration.

All rations of potatoes, vegetables, and meat allow for ½ inedible waste.

The variety of seasoning and type of cookery when there is a woman present, explains the apparent inconsistency of the ration for man and wife.

Tea may be substituted for coffee in the ration of adults. Two ounces per week for each adult should be sufficient.

Cocoa should not take the place of milk and if used should be made with milk, 1 lb. per week for a family of six.

Hardtack—one pound per week for each 4 persons.

Vinegar essential to give flavor to the food. One pint for a family of four.

Allow 1 bar of soap for each child in the family and two bars for each adult. This will care for all cleaning and for the family washing.

allowed for each family of six to use with beans. An occasional substitution of dried fish such as lute-fish, or salt cod fish, or pickled herring was allowed, but the use of canned meats and vegetables was discouraged. Dried fruit was allowed because fresh fruit was prohibitive, and some fruit is absolutely necessary in a ration for children and those in poor health. It also helped to give a pleasing variety to the ration.

The dietary was planned during the period of sugar conservation and only a small amount allowed. Sirup was obtainable because of the generosity of producers in the state. As there were no evil results from the small amount of sugar, and the general health was not affected, the quantity allowed was not increased.

Evaporated milk was used, and the amount was the least compatible with the maintenance of health. Fresh milk was supplied when obtainable. Wherever possible it was urged that skimmed milk and butter milk be obtained from the creameries. In some localities it was not necessary to ration milk and in certain cases it was considered wise to supply a cow.

The system of rationing could not be put into effect until supplies could be obtained in adequate quantities, until the system was authorized by the Fire Commission and the families to receive help designated by the permanent Local Rehabilitation Committees. Therefore a period of ten to twelve weeks passed with the somewhat unstable conditions described. Finally, however, the system was adopted in the larger districts and made effective through the local merchants. It was reported that the stable ration resulted in greater contentment, in concentrated effort to rebuild quickly, and in the release of men of the families for remunerative labor which, in turn, resulted in complete independence of a great number of those cared for.

EXPERIMENTAL COOKERY

As a result of the work of the Coöperative Research Committee, whose communication was in the April JOURNAL (p. 166), a number of papers were presented at the annual meeting and will appear in the JOURNAL from time to time. Besides longer papers, several records were given of shorter research problems. Two of these are printed on the following pages.—EDITOR.

11. Percentage loss in baking—No. 1, 6.75 per cent; No. 2, 8.78 per cent; No. 3, 12.1 per cent.

12. Score card:

| | no. 1 | no. 2 | no. 3 |
|-------------------------------------|---|---|--|
| Shape, color and general appearance | 8 Excellent in shape, color and appearance | 8 Excellent Even across top | 6 Too dark in color High in center |
| Crust..... | 10 Tender, crisp, not sugary | 10 Same as No. 1 | 8 Less tender; dry and thick |
| Crumb..... | 25 Moist, tender, not sticky Grain—fine, pores evenly distributed | 20 Moist and tender Less fine—few tunnels | 12 Less tender but moist Coarse with tunnels |
| Flavor and feel..... | 25 Good flavor "Melts in mouth" | 22 Flavor same Feels coarse in mouth | 18 Flavor less good Feels grainy |
| Lightness or specific volume..... | 9 1584 cc. (Evenly light) | 8 1191 cc. | 6 1254 cc. (High in center only) |
| Keeping qualities..... | 10 | 10 | 8 |
| Total..... | 87 | 78 | 58 |

13. Composition of cake as baked—

| | no. 1 | no. 2 | no. 3 |
|----------------------------------|-----------------|-----------------|-----------------|
| | <i>per cent</i> | <i>per cent</i> | <i>per cent</i> |
| Lard..... | 8.8 | 8.77 | 9.33 |
| Sugar..... | 22.24 | 22.12 | 23.55 |
| Flour solids, (147.2 grams)..... | 30.89 | 30.75 | 32.51 |
| Milk solids, (21.19 grams)..... | 4.44 | 4.42 | 4.70 |
| Egg solids, (11.5 grams)..... | 2.41 | 2.40 | 2.55 |

Conclusions—The cakes baked at the lowest temperature, 121° to 177° C., were in every way superior to those baked at the higher temperatures.

FOR THE HOMEMAKER

A BELATED INDUSTRY¹

JANE ADDAMS

The industry which the title of this paper designates as belated is that of domestic labor, which is belated, both ethically and industrially; the status of its ethics operating very largely as the determining factor in its industrial situation.

It may be well to make clear at once that this paper does not treat of this occupation as a domestic art, in which the members of the household engage and spend time which would otherwise have no economic value. As an art it is charming and destined to endure so long as women cherish their homes and express affection by personal service. This paper treats of the occupation solely as an industry, by means of which large numbers of women are earning a livelihood. An attempt is made to present this industry from the point of view of those women who are working in households for wages.

This industry was little affected by the industrial revolution of the eighteenth century, and is a surviving remnant of the household system which preceded the factory system. Both employers and employes, for the most part, hold moral conceptions and notions of duty which are tinged with feudalism. There is a tendency for each worker to become isolated from her fellow workers; to be dependent upon the protection and goodwill of her employer, and to have little share in the corporate life of the community. The employes in this industry practically lead the lives of those who have not discovered the power to combine; of those who "cannot create a sufficiently coherent organization to sustain themselves under changing conditions."

We are all more or less familiar with the conditions of the trades affected most quickly by the industrial revolution. We know that there were painstaking, industrious, and virtuous men among the weavers,

¹ Reprinted in part, with permission, from the *American Journal of Sociology*, March, 1896. Though written so many years ago the article is not out of date. The statements are true today, and these conditions must be faced.—*Editor's note.*

who were too dull to seize upon the changed conditions of their trades, and who continued to work many hours a day at their hand looms until they and their families perished miserably. The possession of certain individual virtues did not make them of industrial value.

This breaking-up of long established industrial habits and occupations and the necessity for a difficult readjustment comes about constantly with changing conditions, and it is easy to believe that we are in the midst of one of these sweeping industrial changes now; in fact, that it has already come about in regard to many commodities formerly produced in the household which are now produced in factories; that it would naturally come about in regard to most of them, if women did not oppose it and fatuously believe that within these old methods is bound up the sanctity of family life. Most of us can remember the conscientious struggle with which our grandmothers slowly gave up homemade candles, and some of us may dimly recall homespun sheets. All of us know something of the conservative reserve with which our mothers, later, gave up the pleasures and economies of homemade soap in spite of the lively competition and seductive advertisements offered by the factory product.

As industrial conditions have changed, the household has become simplified, from the mediaeval affair of journeyman, apprentices and maidens who spun and brewed, to the family proper; to those who love each other and live together in ties of affection and consanguinity. Were this process complete, we should have no problem of household employment. But, even in households comparatively humble, there is still one alien, one who is neither loved nor loving. The modern family has dropped the man who made its shoes, the woman who spun its clothes, and to a large extent the woman who washes them, but it stoutly refuses to drop the woman who cooks its food; it strangely insists that to do that would be to destroy family life. The cook is uncomfortable, the family is uncomfortable; but it will not drop her as all her fellow-workers have been dropped, although the cook herself insists upon it. So far has this insistence gone that every possible concession is made to retain her. I know an employer in one of the suburbs who built a bay at the back of her house so that her cook might have a pleasant room in which to sleep, and one in which to receive her friends. This employer naturally felt aggrieved when the cook refused to stay in her bay. Viewed in an historic light, this employer might just as well have added a bay to her house for her shoemaker, and then deemed him ungrateful

because he declined to live in it. The employer misunderstood the situation. She did not realize that the desire to live with one's kinsfolk is stronger in most of us than the desire for the comforts to be found in a bay.

The household employe has no regular opportunity for meeting other workers of her trade, and of attaining with them the dignity of a corporate body. The industrial isolation of the household employe results, as isolation in a trade must always result, in a lack of progress in the methods and products of that trade and a lack of aspiration and education in the workman. Whether we recognize this isolation as a cause or not, I think we are all ready to acknowledge that household labor has been in some way belated; that the improvements there have not kept up with the improvements in other occupations. This is largely due to lack of esprit de corps among the employes, which keeps them collectively from fresh achievements, as the absence of education in the individual keeps her from improving her implements. Under this isolation, not only must one set of utensils serve divers purposes, and as a consequence tend to a lessened volume, and lower quality of work, but inasmuch as the appliances are not made to perform the fullest work, there is an amount of capital invested disproportionate to the result when measured by the achievement in other branches of industry. More important than this is the result of the isolation upon the worker herself. There is nothing more devastating to the inventive faculty, nor fatal to a flow of mind and spirit, than the constant feeling of loneliness and the absence of that fellowship which makes our public opinion.

If an angry foreman reprimands a girl for breaking a machine, twenty other girls hear him, and the culprit knows perfectly well their opinion as to the justice or injustice of her situation. In either case she bears it better for knowing that, and for not thinking it over in solitude. If a household employe breaks a utensil or a piece of porcelain and is reprimanded by her employer, too often the invisible jury is the family of the latter, who naturally uphold her censorious position and intensify the feeling of loneliness in the employe.

The isolation of the household employe is perhaps inevitable so long as the employer holds her belated ethics; but the situation is made even more difficult by the character and capacity of the girls who enter this industry. In any great industrial change the workmen who are permanently displaced are those who are too dull to seize upon changed conditions. The workmen who have knowledge and insight, and who

are in touch with their time, quickly reorganize. There are many noble exceptions, but it follows that on the whole the enterprising girls of the community go into factories, and the less enterprising go into households. It is not a question of skill, or energy, of conscientious work, which will enable a girl to rise industrially while she is in the household; she is not in the rising movement. She is belated in a class composed of the unprogressive elements of the community, and which is recruited constantly from the victims of misfortune and incompetence, by girls who are learning the language, girls who are timid and slow, or girls who look at life solely from the savings bank point of view. The distracted housekeeper struggles with these unprogressive girls, holding to them not even the well-defined and independent relation of employer and employed, but the hazy and constantly changing one of mistress to servant. A listener attentive to a conversation between two employers of household labor, and we certainly all have opportunity to hear such conversations, would often discover a tone implying that the employer was abused and put upon; that she was struggling with it solely because she was thus serving her family and performing her social duties; that otherwise it would be a great relief to her to throw up the whole thing and "never have a servant in her house again." Did she follow this impulse she would simply yield to the trend of her times, and accept the system of factory production. She would be in line with the industrial organization of her age. Were she in line ethically, she would have to believe that the sacredness and beauty of family life do not consist in the processes of the separate preparation of food, but in sharing the corporate life of the community, and in making the family the unit of that life.

The selfishness of a modern mistress, who, in her narrow social ethics, insists that those who minister to the comforts of her family, shall minister to it alone, that they shall not only be celibate, but shall be cut off more or less from their natural social ties, excludes the best working people from her service. A man of dignity and ability is quite willing to come into a house to tune a piano. Another man of mechanical skill, but perfect independence, will come to clean and lay a carpet. These men would all resent the situation and consider it quite impossible if it implied the giving up of their family and social ties, and living under the roof of the household requiring their services. Most of the cooking and serving and cleaning of a household could be done by women living outside and coming into a house as a skilled workman does, hav-

ing no "personal service" relation to the employer. There is no reason why the woman who cleans windows in a house, should not live as full a domestic and social life as the man who cleans windows in an office. If the "servant" attitude were once eliminated from household industry, and the well-established one of employer and employe substituted, the first step would be taken toward overcoming many difficulties.

Although this household industry survives in the midst of the factory system, it must, of course, constantly compete with it. To all untrained women seeking employment—save those with little children or invalids depending upon them, to whom both factory and household labor are impossible, and who are practically confined to the sewing trades—a choice is open between these two forms of labor.

There are few women so dull that they cannot paste labels on a box, or do some form of factory work, few so dull that some perplexed housekeeper will not receive them at least for a trial into her household. Household labor then has to compete constantly with factory labor, and women seeking employment, more or less consciously compare these two forms of labor in point of hours, in point of permanency of employment, in point of wages, and in point of the advantage afforded for family and social life. Three points are easily disposed of: (1) In regard to hours there is no doubt that the factory has the advantage. This leaves most of the evenings and Sundays entirely free. The average hours of household labor are from six in the morning until eight at night, with little difference in seasons. There is one afternoon a week, with an occasional evening, but Sunday is almost never wholly free. (2) In regard to permanency of position the advantage is found clearly on the side of the household employe, if she proves in any measure satisfactory to her employer, for she encounters much less competition. (3) In point of wages the household is again fairly ahead, if we consider not the money received but the opportunity offered for saving money. This is greater among household employes because they do not pay board, the clothing required is simpler, and the temptation to spend money in recreation is less frequent. The factory wages may be smaller in the average, but this I believe to be counterbalanced in the minds of the employes by the greater chance which the factory offers for increased wages. In many cases this position is well taken economically, for although the opportunity for saving may be better for the employe in the household than in the factory, her family saves more when she works in a factory and lives with them. The rent is no more when she is

at home. The amount which she pays into the family fund more than covers the cost of her actual food, and at night she can often contribute towards the family labor by helping her mother wash and sew.

This brings us easily to the fourth point of comparison, that of the possibilities afforded for family life. It is well to remember that women, as a rule, are devoted to their families; that they want to live with their parents, their brothers and sisters and kinsfolk, and will sacrifice a good deal to accomplish this. This devotion is so universal that it is impossible to ignore it when we consider women as employes. Young unmarried women are not detached from family claims and requirement as young men are, and, so far as my observation goes, are more ready and steady in their response to the needs of the aged parents and helpless members of the family. But women performing labor in households find peculiar difficulties in the way of enjoying family life, and are more or less dependent upon their employers for possibilities to see their relatives and friends. Curiously enough the same devotion to family life and quick response to its claims on the part of the employer, operates against the girl in household labor and places her in a unique position of isolation. The employer of household labor, in her zeal to preserve her family life intact and free from intrusion, acts inconsistently and grants to her cook, for instance, but once or twice a week such opportunity for untrammelled association with her relatives as the employer's family claims constantly. This devotion to the narrow conception of family life the men of the family also share. The New York gentleman who lunches at Delmonico's eats food cooked by a chef with a salary of five thousand dollars a year, and prepared with all modern appliances. He comes home hungry and with a tantalizing memory of his lunch to a dinner cooked by a woman with a salary of forty dollars a month, with only those appliances possible in a small kitchen. The contrast between the lunch and dinner is great, but the aforesaid gentleman quiets his discontent by his reflection, that, in eating a dinner cooked under his own roof, he is in some occult manner contributing to the sanctity of family life; though his business mind knows full well that, in actual money, he is paying more for his badly cooked dinner than for his well-cooked lunch; that in submitting to such conditions he is failing to use the powers of organization and combination which have made his business so successful.

The household employe, in addition to her industrial isolation, is also isolated socially. It is well to remember that the household employes,

for the better quarters of the city and suburbs, are largely drawn from the poorer quarters, which are nothing if not gregarious. The girl is born and reared in a tenement house full of children. She goes to school with them and there she learns to march, to read and write in companionship with forty others. When she is old enough to go to parties, those she attends are usually held in a public hall and are crowded with dancers. If she works in a factory, she walks home with many other girls, in much the same spirit as she formerly walked in school with them. She mingles with the young men she knows, in frank economic and social equality. Until she marries she remains at home with no special break or change in her family and social life.

If she is employed in a household, this is not true. Suddenly all the conditions of her life are changed. This change may be wholesome for her, but it is not easy, and the thought of the savings bank does not cheer one much, when one is twenty. She is isolated from the people with whom she has been reared, with whom she has gone to school, and among whom she expects to live when she marries. She is naturally lonely and constrained away from them, and the "new girl" often seems "queer" to her employer's family. She does not care to mingle socially with the people in whose house she is employed, as the girl in the country when she "works for" a country neighbor often does, and she suffers horribly from loneliness. This wholesome instinctive dread of social isolation is so strong that, as every city intelligence office can testify, the filling of situations is easier or more difficult just in proportion as the place offers more or less companionship. Thus, the easy situation to fill is always the city house with five or six employes, shading off into the more difficult suburban home with two, and the utterly impossible lonely country house.

There are suburban employers of household labor who make heroic efforts to supply domestic and social life to their employes, who take the domestic employe to drive, arrange to have her invited out occasionally, who supply her with books and papers and companionship. Nothing could be more praiseworthy in motive, but it is seldom successful in actual operation. In the first place it is a forced relationship, and nothing in the world can be worse than a simulacrum of companionship. The employe may have a genuine friendship for her employer and a pleasure in her companionship, or she may not, and the unnaturalness of the situation comes from the insistence that she has, merely because of the propinquity. I should consider myself an unpardonable snob if,

because a woman did my cooking, I should not hold myself ready to have her for my best friend, to drive, to read, to attend receptions with her, but that friendship might or might not come about, according to her nature and mine, just as it might or might not come about between me and my college colleague. On the other hand, I should consider myself very stupid if merely because a woman cooked my food and lived in my house I should insist upon having a friendship with her, whether her nature and mine responded to it or not. It would be folly to force the companionship of myself or my family upon her when doubtless she would vastly prefer the companionship of her own friends and her own family. The unnaturalness of the situation is brought about by the fact that she is practically debarred by distance and lack of leisure from her own natural ties, and then her employer feeling sorry, insists upon filling the vacancy in interests and affections by her own tastes and friendship. She may or may not succeed, but the employe should not be thus dependent upon the goodwill of her employer. That in itself is feudal.

Added to all this is a social distinction which the household employe feels keenly against her, and in favor of the factory girls, in the minds of the young men of her acquaintance. A woman who has worked in households for twenty years told me that when she was a young and pretty nurse girl, the only young men who "paid her attention" were coachmen and unskilled laborers. The skill in the trades of her suitors increased as her position in the household increased in dignity. When she was a housekeeper, forty years old, skilled mechanics appeared, one of whom she married. Women seeking employment understand perfectly well this feeling, quite unjustifiable, I am willing to admit, among mechanics, and it acts as a strong inducement toward factory labor.

I have long ceased to apologize for the views and opinions of working people. I am quite sure that on the whole they are just about as wise and just about as foolish as the views and opinions of other people, but that this particularly foolish opinion of young mechanics is widely shared by the employing class can be easily demonstrated. The contrast is further accentuated by the better social position of the factory girl, and the advantages provided for her in the way of lunch clubs, social clubs, and vacation homes, from which girls performing household labor are practically excluded by their hours of work, their geographical situation, and a curious feeling that they are not as interesting as factory girls.

It is not the object of this paper to suggest remedies; but if the premise in regard to the isolation of the household employe is well taken, and if the position can be sustained that this isolation proves the determining factor in the situation, then certainly an effort should be made to remedy this, at least in its domestic and social aspects. To allow household employes to live with their own families and among their own friends, as factory employes now do, would be to relegate more production to industrial centers administered on the factory system, and to secure shorter hours for that which remains to be done in the household.

It might be possible that the employer of household labor would have to go back, at least during the period of transition, to the original office of "lady," that of "bread giving" to her household. It might be necessary for her to receive the prepared food and drink and serve it herself to her family and guests, but truly that is no hardship, which may be made a grace and a token, and there is no reason why in time the necessary serving at a table should not be done by a trained corps of women as fine as the Swiss men who make the table d'hôte of the European hotel such a marvel of celerity. In the fewer cases in which the household employes have no family ties, doubtless a remedy against social isolation would be the formation of residence clubs, at least in the suburbs, where the isolation is most keenly felt. Indeed the beginnings of these clubs are already seen in the servants' quarters at the summer hotels. In these residence clubs the household employe could have the independent life which only one's abiding place can afford. This, of course, presupposes a higher grade of ability than household employes at present possess; on the other hand it is only by offering such possibilities that the higher grades of intelligence can be secured for household employment. As the plan of separate clubs for household employes will probably come first in the suburbs, where the difficulty of securing and holding "servants" under the present system is most keenly felt, so the plan of buying cooked food from an outside kitchen and of having more and more of the household product relegated to the factory will probably come from the comparatively poor people in the city who feel most keenly the pressure of the present system. They already consume a much larger proportion of canned goods and baker's wares and "prepared meats" than the more prosperous people do, because they cannot command the skill nor the time for the more tedious preparation of the raw material. It is comparatively easy for an employer to manage her household industry with a cook, a laundress, a waitress. The difficulties really begin when the family income is so

small that but one person can be employed in the household for all these varied functions, and the difficulties increase and grow almost insurmountable as they fall altogether upon the mother of the family, who is living in a flat, or worse still, in a tenement house, where one stove and one set of utensils must be put to all sorts of uses, fit or unfit, making the living room of the family a horror in summer, and perfectly insupportable in rainy washing days in winter. Such a woman is living in a complicated age, totally without the differentiation of functions and utensils which that age demands.

A fuller social and domestic life among household employes would be the first step toward securing their entrance into the larger industrial organizations by which the needs of a community are most successfully administered. Many a girl who complains of loneliness, and who relinquishes her situation with that as her sole excuse, feebly tries to formulate her sense of restraint and social mal-adjustment. She sometimes says that she "feels so unnatural all the time." And when she leaves her employer her reasons are often incoherent and totally incomprehensible to that good lady, who naturally concludes that she wishes to get away from the work and back to her dances and giddy life, content to stand many hours in an unsanitary factory, if she has these. The charge of the employer is only a half truth. These dances may be the only organized form of social life which the disheartened employe is able to mention; but she has felt the social trend of her times, and is trying to say what an old English poet said five centuries ago: "Forsooth, brothers, fellowship is heaven, and lack of fellowship is hell; fellowship is life and lack of fellowship is death; and the deeds that ye do upon earth, it is for fellowship's sake that ye do them."

If the girl who engages in domestic labor is doomed to a narrow social life, if she is isolated from her family and natural industrial associations, then it follows that the brightest girl will not engage in domestic labor, but will follow the natural trend of the times, towards factory work and associated effort.

Will women again fail in this time of reorganization, as they utterly failed to reorganize their half of the world's work, upon the introduction of the factory system? Will they utterly disregard the lonely girl within their household, and when she demands a fuller life, and leaves that household, will they weakly continue to complain, rather than make a vigorous effort for bringing household industry into the trend of the times? To fail to apprehend the tendency of one's age, and to fail to adapt the conditions of an industry to it is to leave that industry ill adjusted and belated.

EDITORIAL

A National Campaign for Government Savings and Investment.

At the Twelfth Annual Meeting of the American Home Economics Association, Dr. Benjamin R. Andrews, as the representative of the Savings Divisions, U. S. Treasury Department, invited the Association to take a definite part in the National Thrift Movement for government savings and investment and the Association responded by adopting a resolution printed below which will serve as the basis of the Association's program of action, and by appointing a National Thrift Committee of the Association, composed of Miss Ruth Wardall, Chairman, University of Iowa, Miss Helen Hollister, Pratt Institute, Brooklyn, and Miss Lois Irwin, formerly Home Demonstration Agent at Spartanburg, S. C., now of the National Savings Organization, Federal Reserve Bank, Richmond.

Personal Savings and Investment for Professional Workers. Dr. Andrews in discussing savings and investment before the Association made the following suggestions:

"Home Economics workers like all professional people need to work out reasonable plans for personal finance, including provision for regular saving and investment. Our incomes, in other words, should be used so as to provide an emergency fund carefully invested for use when need or opportunity makes a call upon it necessary or desirable. Just how can one best finance the unforeseen emergency? Life and other insurance is, of course, one method and a method always to be recommended, but insurance should not be the exclusive reliance. Insurance is really 'protection,' not saving which will create that reserve fund which every one needs. The best advice seems to be: Carry a reasonable amount of life insurance to cover the financial contingencies which will arise incident to your death, but do not ordinarily use insurance as a method to save for your own old age or retirement. At any rate in addition to insurance, build up a fund by regular saving and safe investing, which can be cashed in upon any emergency. Government securities are the best investment for a personal reserve fund—particularly the present issues of War Savings Stamps which pay 4 per cent compound interest,

and the new U. S. Treasury Savings Certificates issued July 1 by the Treasury Department, on the same terms as War Savings Stamps, but in \$100 and \$1000 denominations. These cost \$83.60 and \$836, respectively in July and slightly more each month later than July, and mature January 1, 1924, paying 4 per cent interest compounded quarterly. Stamps and certificates bear interest from the date of purchase and can be redeemed in case the money is needed, interest at 3 per cent being paid till the time of redemption. There are other safe investments, of course, but the amateur investor is always being tempted to try some 'safe' investment which turns out to be a fraud. The professional worker will find these rules worth while:

Save regularly a part of all income received; save and invest savings the day money is received; invest savings where they are safe—and U. S. Government securities are the world's best investment."

The Thrift Platform of the Association: The Association at its business meeting adopted the following resolution which provides the program of action to be carried out by the Thrift Committee:

Resolved that the American Economics Association heartily endorses the National Thrift and Savings Movement and calls upon all home economics workers to participate personally in this movement by furthering the introduction of government savings societies or U. S. Thrift clubs into schools and especially among all groups and clubs of women and girls. We recommend the appointment of a National Thrift Committee of the American Home Economics Association to include three members who are asked to appoint a Home Economics Thrift Chairman in each State whose duties will include:

Promoting the Thrift Movement among all home economics institutions and departments.

Organizing thrift projects within the regular home economics program so that it may remain a permanent part of the home economics work.

Establishing thrift standards for students by introducing thrift instruction into the courses of study, and by encouraging all students to keep accounts, working out with them carefully planned budgets for their school expenditures.

Providing for the sale of Thrift and W. S. S. and other Government securities, in every school.

Encouraging home economics workers to coöperate as speakers on thrift before clubs and other meetings.

COMMENT AND DISCUSSION

The following letter was posted at the meeting of the American Home Economics Association at Blue Ridge, with the request that any who are willing to coöperate should sign their names. Many readers of the JOURNAL should be interested to write Miss Weller.

At the annual meeting of the American Home Economics Association last June, the Chairman of the Textiles Section appointed a committee to ascertain to what extent, in what direction, and by what means the teachers of textiles and clothing are making their work function in teaching girls to spend wisely for clothing and house-furnishing materials.

Will you not coöperate in this work by writing us what you are doing along the lines indicated by the following topics?

- a. Systematic keeping of accounts of clothing expenditure.
 - b. The clothing budget based on the individual or family income. Do you have results covering a period of three or four years?
 - c. Allowance given to girls in school or college for clothing. Does quality of clothing purchased show results of class instruction?
 - d. Home projects. For example, selection and purchase of clothing and household fabrics under supervision; remaking of garments; mending and renovating.
 - e. Comparative tests for length of service. Records should include date of purchase; facts regarding repairing, laundering, re-making, length of time worn, satisfaction in wearing.
 - f. Content of course in design and textiles adapted to the problems in selection of clothing and house furnishing materials. To illustrate, selection of lace and embroidery; selection of outer and under garments; texture and color combinations; suitability of definite materials for given purposes; choice of pattern for draperies; etc.
 - g. Assignment of shopping problems, through coöperation with local stores, talks with buyers, class excursions, fabric tests at request of merchant, etc.
- It is possible you are teaching intelligent consumption of clothing through other means. We shall be especially interested if you have worked out a plan that applies to your local situation. Whatever you may be doing we shall be interested in it, and in the results you are getting.

Very sincerely yours,

MARION WELLER,
*Chairman of Committee,
University Farm,
St. Paul, Minn.*

THE QUESTION BOX

Question: In my work I have been taught that boiling eggs hardened the protein and made it harder to digest. This has been disputed, the person claiming that the medical authorities and chemists say that eggs should be boiled for twenty minutes to be in the easiest digestible form.

Answer: The belief that raw eggs (whites) are more easily digested than cooked has been founded largely upon the work of Beaumont, (1833) who was fortunate in being able to make physiologic studies upon one of his patients, namely, Alexis St. Martin. An abdominal wound, caused by a gun shot, had healed leaving an opening through which the digestive processes could be studied. When raw egg-white was introduced into the stomach of the patient, Beaumont observed that it passed out more rapidly than other foods, including cooked egg-white. This fact was also noted by Cannon (1905), who observed that raw egg-white was the only protein that passed through the pylorus at a rate comparable to that of carbohydrates. However, later work has shown that although raw egg-white leaves the stomach rapidly it does not necessarily mean that peptic digestion has taken place. In fact, both Steinitz (1898) and Mendel and Lewis (1913) have found that raw egg-white, fed to animals, causes vomiting and diarrhea. Similar results were obtained by Bateman who further observed that from 30 to 50 per cent of the raw egg-white fed was eliminated in the feces. Apparently raw egg-white contains an anti-proteolytic enzyme which inhibits its digestion in the stomach and also in the intestines.

The digestibility of egg-white is facilitated by temperatures incident to coagulation. According to Bizarro (1913) the most favorable temperature of coagulation, from the standpoint of digestibility, is 80°C., while Frank (1911) believes that it lies between 70°C. and 75°C.

The egg-yolk, on the other hand is excellently well utilized when either raw or cooked, although it may sometimes cause digestive disturbances when a number are taken at one time, because of the high fat content.

The statement that eggs should be boiled twenty minutes to be in the most digestible form is without scientific foundation. In a series of experiments aimed to determine the effect of coagulating eggs at different temperatures, it was found that the egg-white which was coagulated at 80°C. was more slowly digested than that coagulated at 75°C.

The literature on the subject is reviewed by W. G. Bateman, *Jour. Biol. Chem.*, 26 (1916), p. 263.

BOOKS AND LITERATURE

Modern Dietetics. By LULU GRAVES.
Chicago: Modern Hospital Publishing Co.,
1917, pp. 226. \$2.00. By mail of the
Journal, \$2.10.

The long delay in the review of this book is unfortunate, but on some accounts it is perhaps particularly appropriate that attention should be called to the book just now. The last two years have brought many skeptical administrators to a realization of the value of trained dietitians in hospitals and other institutions. This winter will see a largely increased need for just such a manual, a book which gives the foundations of all the phases of the dietitian's work: the buying and storing of food, its nutritive value and its preparation; the equipment of the kitchen and serving rooms; the feeding of surgical patients, of various kinds of medical patients, of the servants, and, most difficult of all, of the internes and nurses; tables of the composition of foods, many special recipes and a skeleton course of dietetics for nurses, all are considered in this comprehensive work.

In general, the book is characterized by clear, direct treatment of the subject in hand and by great good sense. On the one hand, emphasis is placed on the necessity of experience that reaches beyond the store-room and the diet kitchen, and on the other, there is constant incidental evidence that the author has had that experience.

Teachers and dietitians particularly interested in the scientific aspects of nutrition may perhaps feel that too little attention is paid to that side of the subject, not only in the general balance of the book, but in the consideration of the different groups of foods; that the definition of food on page 13 is inadequate in that it omits the "regulation of body processes" as one of the functions of food; that too little emphasis is placed on the distinction between complete and incomplete proteins (page 16), also upon the great importance of fruits and

vegetables, especially green vegetables, and, above all, of milk, as foods; that the statements about vitamins as being "present in cereals, legumes, and meat," stimulating metabolism, and being "destroyed by higher temperatures" are so brief as to be misleading. But no one book can contain everything known on its subject. This one would defeat its own purpose if it did. No book can be quite up to date in a science which grows as fast as does nutrition, and this one, written largely as a series of papers for *The Modern Hospital*, in 1916, is being reviewed three years after the writing. These criticisms are made with the idea of indicating to the young dietitian who may use the book this winter, the spots most likely to be changed in later editions. She will find in Miss Graves' manual inspiration and help, not only in the larger ideas of management and system, but in the details by which these ideas may be carried out practically, and in the ideals which should animate her. "Modern Dietetics" is a valuable addition to the literature of home economics as well as to that of hospital management.

RUTH WHEELER,
Goucher College.

One-Hundred-Portion War Time Recipes.

By BERTHA NETTLETON. Philadelphia:
W. B. Lippincott Company, 1918, pp.
43. \$1.00. By mail of the Journal, \$1.05.

Many of the war time books must be laid aside as of little value today, but some remain distinctly useful, since much of their material is of universal application. Of the latter class is this little volume of recipes offered by the manager of the Horace Mann lunch room, who is also Associate in Institutional Administration in Teachers College. Reliable books containing large portion recipes are none too common. This one, especially adapted to the school luncheon, contains an excellent variety of attractive dishes, each yielding a hundred portions.

PAMPHLETS RECEIVED

Issued by the Department of the Interior, Bureau of Education:

- Advanced Educational Work Within a Government Bureau.* P. G. Agnew. Higher Educational Circular No. 14. February, 1919.
Agricultural Education 1916-1918. C. H. Lane. Bulletin, 1918, No. 44.
Commercial Education. Frank V. Thompson. Bulletin, 1919, No. 18.
Educational Work of the Boy Scouts. Lorne W. Barclay. Bulletin, 1919, No. 24.
Educational Work of the Churches in 1916-1918. Bulletin, 1919, No. 10.
The Kindergarten Curriculum. Bulletin, 1919, No. 16.
Medical Education, 1916-18. N. P. Colwell, M.D. Bulletin, 1918, No. 46.
Vocational Education. William T. Bawden. Bulletin, 1919, No. 25.

Issued by the Department of Commerce, Bureau of Fisheries:

- Groupers: Fishes You Should Try.* With recipes for cooking them. Economic Circular No. 44.

Issued by the United States Department of Agriculture:

- Digestibility of Certain Miscellaneous Animal Fats.* Arthur D. Holmes. Bulletin No. 613.
Digestibility of Some By-Product Oils. Arthur D. Holmes. Bulletin No. 781.
Experiments on the Digestibility of Wheat Bran in a Diet without Wheat Flour. Arthur D. Holmes. Bulletin No. 751.

Issued by the United States Public Health Service:

- Code of Lighting for Factories, Mills, and Other Work Places.* Reprint No. 499 from the Public Health Reports.
Mosquito Control about Cantonments and Shipyards. J. A. Le Prince. Reprint No. 511 from the Public Health Reports.
A Note on the Flight of Mosquitoes Through Horizontal Water Pipes. W. W. King. Reprint No. 507 from the Public Health Reports.
The Treatment of Sewage from Single Houses and Small Communities. Earle B. Phelps. Reprint No. 504 from the Public Health Reports.
A Unified Health Service. B. S. Warren. Reprint No. 506 from the Public Health Reports.
Water-Borne Typhoid Fever Outbreak in Herkimer, N. Y. Theodore Horton. Reprint No. 512 from the Public Health Reports.

Issued by the publishers listed:

- Conditions of Women's Labor in Louisiana.* Report by Women in Industry Committee, Council of National Defense, New Orleans Division and Louisiana State Division. 1919.
Evening and Part-Time Schools in the Textile Industry of the Southern States. Bulletin No. 30, Trade and Industrial Series No. 5, Federal Board for Vocational Education.
Fly Bulletin. Bulletin, Vol. XV, No. 3, Kansas State Board of Health.
Guide Posts on the Road to Health. Special Report No. 3, Municipal Reference Library, City of New York.
Mental Defect in a Rural County. Walter L. Treadway and Emma O. Lundberg. Dependent, Defective, and Delinquent Classes Series No. 7, Bureau Publication No. 48, U. S. Department of Labor, Children's Bureau.
Proposed Plan for World-Wide Coordination of Red Cross Activities. American Red Cross, Washington, D. C., March 15, 1919.
Reconstruction in the Domestic Science Kitchen. Helen C. Goodspeed. Issued by C. P. Cary, State Superintendent, Madison, Wis.

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Habit Versus Instinct in Eating. Hugh Payne Greeley, *Boston Med. and Surgical Jour.*, Dec. 19, 1918.

Lessons in Foods and Cookery with Simple Appliances. Green Leaves as Food. Anna Barrows, *Amer. Cookery*, May, 1919.

The Value of Green Foods in the Diet. Emma Francis, *Good Health*, Apr. 1919.

The Importance of Minerals in the Diet. Alzira W. Sandwall, *The Commonwealth*, Dec. 1918.

A Year's Change in Food Habits. *Amer. Jour. Pub. Health*, 9 (1919), No. 2.

Effect of Food Control on the Food Supply. Harry C. Barnard, *Amer. Jour. Pub. Health*, 9 (1919), No. 3.

Sterilization of Bottles for Pasteurized Milk. Marion Hopkins and Mary L. Kelly, *Amer. Jour. Pub. Health*, 9 (1919), No. 3.

The Milk Industry and The War. Chas. E. North, *Amer. Jour. Pub. Health*, 9 (1919), No. 4.

Problems of Canning. Willard E. Bigelow, *Amer. Jour. Pub. Health*, 9 (1919), No. 4.

Studies on the Composition and Nutritive Value of some Sub-Tropical Fruits. N. E. Jaffa and F. W. Albro. Annual Report, California Avocado Association, 1917, Riverside, California, 1918, pp. 85-92. The fruits include avocado, guava, sapote, feijoa, and cactus fruits.

A New Sugar in the Avocado. *Ibid.*, p. 92. Commercial Constants. *Ibid.*, pp. 92-93.

The Avocado for the Table. Victor Hirtzler, *Ibid.*, pp. 51-54. A considerable number of recipes are given, including several in which the avocado is cooked. The recipes in general are rather elaborate and such as would be used for hotel rather than home service.

HOUSE CONSTRUCTION AND FURNISHINGS

How to Select Spring Curtain Fabrica. Alice F. Bettina Jackson, *House and Garden*, April, 1919.

Shades that Give Color and Light. Gertrude Campbell. *House and Garden*, April, 1919.

The Playroom of the Golden Age. Katherine S. Dodge. *House and Garden*, April, 1919.

Twelve Dont's for Amateur Decorators. Nancy Ashton. *House and Garden*, April, 1919.

The Joy of Sleeping Out-of-Doors. Francis H. Allen. *House Beautiful*, April, 1919.

Our Country Houses of Tomorrow. C. Grant LaFarge, *Country Life*. April, 1919.

Cupboards in an Old House. Sarah Hood Gilpin Bright. *Country Life*, April, 1919.

Building Beauty into the House. Bernhardt Muller, *Touchstone*, April, 1919.

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The Child and Its Proper Environment. Hanna Tachan, *House Beautiful*, April, 1919.
A Quality Market for Home Furnishings. Wm. Laurel Harris. *Good Furniture*, April, 1919.
Inter-Period Furnishings—Classic Revival. Edward Stratton Holloway, *Good Furniture*, April, 1919.
Tendencies in Modern Decoration. Ami Rouge, *House and Garden*, April, 1919.
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For the Children of Two Continents. An Account of the International Conference on Child Welfare Standards. Neva R. Deardorff, *Survey*, May 17, 1919.
Probable Economic Future of American Women. David Snedden, *Amer. Jour. Soc.*, March, 1919.
The Role of Social Heredity in Education. Walter R. Smith, *Amer. Jour. Soc.*, Mar. 1919.
Heading off the Slum—Why Housing Laws are Necessary. Albion Fellows Bacon, *Women's Municipal League of Boston Bul.*, Jan. 1919.
Some Aspects of the Housing Problem: Housing Reform and the Industrial Development of Boston; Housing Conditions as Affecting the Welfare of Persons of Foreign Birth or Descent; Housing and Health in the North End. *Women's Municipal League of Boston Bul.* Apr. 1919.
The Health Game. A Contest in which the Government Plays. Lucy Oppen, *Survey*, Apr. 5, 1919.
Urgent Public Health Needs of the Nation. Rupert Blue, *Amer. Jour. Pub. Health*, 9 (1919), No. 2.
Reconstruction and The Child. Josephine Baker, *Amer. Jour. Pub. Health*, 9 (1919), No. 3.
Industrial Lighting. C. E. Clewell, *Amer. Jour. Pub. Health*, 9 (1919), No. 3.
The Manufacture of Soap and Candles: Raw materials (other than oils) and by-products. M. Rindl, *So. African Jour. Indus.*, 1 (1918), No. 16, pp. 1487-1496. The discussion of soap making includes both commercial and homemade soap, the latter being the methods followed on Boer farms. The account of candle making deals with the subject commercially in South Africa.

NEWS FROM THE FIELD

Child Welfare Standards. A conference on child welfare standards was held in Washington, D. C., May 5 to 8, under the auspices of the Children's Bureau.

At this conference, foreign countries were represented by experts who have had a part in the work done in Europe for the protection of children during the stress of war. A working committee of American authorities invited by the Secretary of Labor, and members of the Bureau staff met with the foreign guests.

According to the standards, drawn up by the conference, for the health, education, and work of the American child, 16 is the lowest age at which a child should go to work in any occupation. The only exception to this is that in vacation time children between 14 and 16 may be employed in agriculture and domestic service. Children between 7 and 18 should have nine months of school, either full or part time, each year. A child must have finished the eighth grade in school as well as reached his sixteenth birthday before he may be employed. If he gets a job when he is sixteen, education must be provided for him during the next two years at day time continuation schools.

The working day of minors should never be longer than 8 hours. For children between 16 and 18 the working day should be shorter than that for adults. Minors should be paid at a rate which, for full time employment, would yield at least the "necessary cost of proper living." They should not be employed at night or in hazardous occupations.

In order to protect mothers and babies the standards declare that prenatal care, trained attendance at childbirth, and adequate nursing and domestic assistance should be made available for every mother. The necessity of prompt and complete birth registration was pointed out. More health centers should be established, and a public

health nurse secured for every two thousand of the population.

For the school child there should be better school buildings, more recreation, and better care of health. For the adolescent in school or out there should be advice and instruction as to health needs and ample provision for wholesome recreation.

The state was held to be particularly responsible for the welfare of its defective, dependent, and delinquent children, and for the supervision of institutions or agencies caring for them. Only as a last resort, the standards declare, should a child be removed from his own home. The standards set forth the principles of juvenile court organization and methods of care for the mentally handicapped child and the child of illegitimate birth. They urge that more social work for children in rural parts of the country be undertaken. The appointment of State child welfare commissions and frequent revision of child welfare legislation are recommended.

In pursuance of the Children's Bureau's purpose to formulate a thoroughgoing reconstruction program in matters affecting the wellbeing of children, a series of regional conferences has since been held in the large cities of the country.

The Home Economics Division of Iowa State College recently received from the estate of Mary F. Rausch a fund of \$500 to be known as the "Mary F. Rausch Memorial Fund." The income of this fund will be used as an annual prize for junior students, awarded on the basis of ability, scholarly attainment, character, and interest in affairs which are worthy the attention of students who are preparing themselves for efficient service in home economics work. The prize this year was awarded to Frances Newell of Columbus Junction, Iowa.

Omicron Nu. *Eta* chapter is preparing a directory containing the name, occupation, and address of every alumnae member, in order to keep in touch with former members and to be able to communicate with them concerning business carried on in this group.

Beta chapter welcomes three juniors into active membership. A chapter letter has been written to each member of *Beta* alumnae

acquainting her with all activities and plans.

Gamma chapter, on May 21, initiated Miss Ethelwyn Miller and Miss Rosamond Cook, five seniors and thirteen juniors, as members of the society.

Notes. Dr. N. E. Goldthwaite has returned to her home in Adams, Mass., after a trip of nearly two and a half years in the Orient.

TENTATIVE PROGRAM OF THE AMERICAN DIETETIC ASSOCIATION,
CINCINNATI, OHIO, SEPTEMBER 8-12, 1919

Tuesday, September 8

9 a.m. General Session

Courses of Instruction for the Training of Dietitians, Katherine Fisher, Teachers College, Columbia University

Discussion led by Lenna Frances Cooper, Supervising Dietitian, War Department, Washington, D. C.

Training of Pupil Dietitians, Violet Ryley, General Organizing Dietitian, Soldiers' Civil Reestablishment, Toronto, Can.

2.30 p.m. Section Meetings

Section on Teaching—Katherine Fisher, Teachers College, Columbia University, Chairman
Standard Curriculum for Nurses' Training Schools, Ruth Sherlow

Section on Social Service—Blanche Joseph, Field Dietitian, Michael Reese Dispensary, Chicago, Chairman

Wednesday, September 9

9 a.m. General Session

Hospital Cafeterias, Eleanor Wells, Teachers College, Columbia University

Discussion led by Seale Harris

College Feeding Problems, Emma Baker

2.30 p.m. Section Meetings

Section on Administration—Emma Smedley, Director School Luncheons, Philadelphia, Chairman

Problems in the Administration of Government Dormitories, Olive Davis

Section on Dietotherapy—Minnie A. Phillips, University of Iowa, Chairman

Paper by Dr. Baumann, University of Iowa

8 p.m. General Session

What we have Learned in Dietetics from the Army, Col. R. H. Murlin

Food Waste, Lieut.-Col. Ernest Irons

Food Clinics, Bertha Woods, Boston Dispensary

Thursday, September 10

Program furnished by the Cincinnati Hospital

Friday, September 11

9 a.m. Business Session

Paper by Mary Swartz Rose, Teachers College, Columbia University

2.30 p.m. Report of the American Home Economics Association Meeting

Report of the Committee on Standardization of Curriculums for the Training of Dietitians

THE Journal of Home Economics

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SEPTEMBER, 1919

No. 9

HOME ECONOMICS IN THE WOMAN'S COLLEGE¹

RUTH WHEELER

Professor of Home Economics, Goucher College, Baltimore

The hospitality and trustfulness of the South is emphasized in the invitation extended to me, a Southerner of less than a year's standing, with my harsh Pennsylvania-Illinois accent still unsoftened, to discuss one of the problems of the South. Of course I do not yet know anything worth while about any distinctively southern problem, but the problems of the woman's college have been a matter of interest to me ever since my four years at Vassar. And all of us are much alike. Such meetings as this emphasize the likenesses. The difference in our problems is just enough to be stimulating; without it we might get up an iron clad syllabus, meet once to ratify it, then company 'bout face, and go home to teach it forever after, or until grand headquarters sent out a new manual.

For years we have been looking toward standardization. Publishers beg us to get together. They say they cannot publish books on dietetics, because no two schools mean the same thing by the title, and that home management is even worse. Our special apostle of standardization is not here—I would not dream of attempting to take up her formidable cudgels—but please at this point insert a legal phrase to the effect that nothing herein stated is to be interpreted as decrying the need of standardization in our nomenclature and in our courses, because I am going to plead for variety in types of courses.

¹ Presented at the Twelfth Annual Meeting of the American Home Economics Association, Blue Ridge, N. C., June, 1919. This paper was one of a group discussing Home Economics Problems in the South, arranged for the program of the Southern Home Economics Association.

It may be said that there are three main types of courses in home economics. Here as in all classifications, there are infinite gradations between the types, which may be called the technical, the university, and the academic courses. I hope we shall always have these types; every one of them has at least the possibility of a brilliant future; but certainly the strictly academic course is the most backward. There are two reasons for this. First, proper soil has not been available. Most of the universities began their work in this subject with what may be called an academic course. Nobody was satisfied with it, and it presently developed into the more or less professional course it is now. This was natural, because the universities have many professional and semi-professional courses. The second reason why the strictly academic course in home economics failed to develop is that there has not been enough material from which to build it—there have not been enough structural minerals, or amino acids, not to mention vitamins. An academic course in a science still in embryo is of necessity thin, superficial, sciolistic; but such a course in a science enriched by enough information behind and under it may be in high degree valuable. The chemistry taught in medical schools used to be a very dilute solution, hated by the students and teachers alike, and this was not only because it was taught with no laboratory work to vitalize the facts, but also because there were not enough facts available. Physiological chemistry was in embryo.

Now I hold—and I am sure that, whoever else may disagree with me, no one in this Association will do so—I hold that home economics has reached a state of development which makes it possible to build from it a strictly academic course; that there is a place for it in the educational system of this country; and that it will not only enrich the general curriculum of the academic woman's college and the general equipment of the students, but also be itself enriched by its use in this way.

Some paragraphs back I said that I wanted to plead for variety. When our students leave us on graduation, they almost always pay us the huge compliment of reversing the cylinder (or whatever it is you do to change a dictagraph to a dictaphone). They have enjoyed their dietetics so much that they teach dietetics to high school students, or to even younger victims. And we do just about the same thing. We go to a university for special study and carry the courses back to our own institutions. Many of us have heard the author of one of the best of dietet-

ics courses bemoan the fact that this continent is dotted with places in each of which a replica of her course is given without any of the modifications necessary to fit it to its new environment.

We spend five years or so helping with a splendid solid symmetrical course; we go out to spread the good work; and what a temptation it is to try to transplant the whole thing bodily. How irritating it is to find that it will not fit the new location! How inferior the new soil seems, lacking in depth and richness, lacking, to drop the metaphor, in appreciation of a really fine thing—not ourselves, of course, there is nothing personal in our feeling—but of our subject. An English-woman I know, on starting for this country, was told by her brother, "Now don't expect that whole continent to adapt itself to you, for it won't; if any adapting is to take place, you are the smaller body, and you will have to do it."

The old conservative academic women's colleges have a real function in our national education. That home economics belongs in them is almost too obvious to need saying here, but let us think out the reasons. Most of my pleas you do not need at all, but some of your colleagues in pure science and the classics in the colleges and universities do need them. In its present stage of development the study of home economics may involve severe and valuable training. Time was when educators looked askance at all science as too useful to be cultural, and as out of place in any but technical schools. When so-called "pure" science had been received, suspicion was transferred to "applied" science. We have not yet passed this stage, but scientists are coming more and more to see that the application of science requires the most exact knowledge, and may involve the highest and deepest thinking. In the beginnings of any applied science there is danger of making the teaching of it superficial or simply practical and vocational. There is no excuse for that in home economics. The subject is not in an embryonic state. In the twenty years since the universities began to introduce it, it has developed sufficiently to offer a broad field for choice. It can contribute materially to the curricula of such varied types of educational institutions as trade schools, medical colleges, graduate schools of universities, and academic colleges. The senior student who came to 'the Department for help in planning to take charge of her mother's house, and after enthusiastically noting down fifteen minutes' worth of concentrated essence, complacently remarked, "I always say a college girl doesn't need to take courses in home economics; she can work it up by herself,"

was away behind the times. She can "work it up," or history, or mathematics, or English, or anything else, if she is an exceptional person; but home economics is not in a class by itself in this respect.

One of the functions of education is to give the students the information and training, mental and cultural, that shall make them more intelligent and more efficient in their citizenship, and in their personal lives. More and more we are emphasizing citizenship in our teaching. The nation needs to have women take an active responsible part in its affairs because women and men look at many matters from a somewhat different angle. Women bring to problems of housing, for example, of child welfare and education, and of food, a different viewpoint. The practical result one would expect from this is not, so far, very apparent. According to our critics—and if we can only avoid getting too impatient with their inaccuracies to listen to them we can often learn something from our critics—the votes of women run so nearly parallel to those of men that nothing is gained by their suffrage. So far as this is true, it is so because, though women have a distinctive point of view, they do not know how to use it. They do not know how to apply to these problems their constantly increasing knowledge of physics, chemistry, biology, physiology, bacteriology, mathematics, economics, and sociology. Home economics gathers together facts from all these sciences, correlates, focuses, and applies them.

Then as to the influence of college education on the individual lives of women. We are told by critics that a college education increases women's interest and matures their ideas in every line except home activities and religion, that as a consequence, college women, at the end of their formal education, have such immature and inadequate ideas on these two subjects that they think neither worthy of further endeavor. They do not realize that the greater interest they find in other lines of thought is due, not to an innate superiority of the field, not altogether to individual differences in interest, but chiefly to the fact that for four years they have sedulously cultivated their ideas along many other lines, while their thinking about spiritual matters and home activities has been left in an embryonic state. They have not really thought, studied, grown up, along these lines at all. They can, however, develop their way of thinking on housing, food, and clothing problems in a scientific, cultural, and academic way.

If home economics is to be true to its whole purpose, the development of the best all-round life, we cannot utterly forget the spiritual side;

and where it is not possible to make one's own life philosophy clear, one can at least evidence the same respect for sincere and serious thinking along this line that one would show for sincere and serious thinking along any scientific line.

In deciding to introduce home economics as an integral part of her curriculum, Goucher College among the old academic colleges has shown herself a pioneer, a pathfinder. If the present direction continues, the Department of Home Economics at Goucher will base its course on the physical and biological sciences and on economics, and will apply the facts and the methods of those sciences to the problems of its special field, problems of housing, of clothing, and of nutrition. It will give just enough practical work to vitalize and drive home the application, and to serve as a basis for individual study of such problems, no more than this; not enough to give technical skill, important as this is. Such technical training is not a part of an academic course which in this, as in other lines, should lay a broad, firm foundation for later specialization. Students who desire technical skill will be given opportunity to get it outside of the class room. On the other hand, it is as impossible to teach home economics properly without laboratory work as to teach chemistry or bacteriology in that way. In all these lines it has been tried. The colleges should not train technical chemists, dietitians, cooks, dressmakers, nor decorators. On the other hand, they are quite as far wrong if they teach theory without practice, if they are afraid of the factors that vitalize and at the same time secure the theory,—if they entertain the fear expressed by one visitor, "What is that long table in your first floor laboratory? You don't have *cooking*, do you?" The courses in the woman's college will differ from that in the university as the latter differs from the courses in the technical school in that a smaller proportion of time will be given to the getting of technique, and a greater to work in related and marginal subjects. It will aim first to enrich the course of the general student and only secondarily to serve those students who major in home economics. A survey course will be offered without prerequisites which will give the foundations of home economics through lectures, reference work, and discussions; emphasizing the fact that the object of all home economics is to further the welfare of the family, whether it attacks problems of international and municipal housekeeping, or those of the individual or of the family group. It will include a brief study of the family and its physical environment, budgets for the family and for the college girl, and the

principles underlying the proper selection and use of houses, clothing, and food. Without majoring in home economics, any girl who has the necessary prerequisite of a year of college chemistry may take the first year of food study; one who has the foundation in chemistry and economics may take the work in textiles and clothing. The courses on the house also may be isolated. This is true theoretically or actually, in many university courses, but the *chief aim* of the course in a woman's college should be the enrichment of the general curriculum, especially at first; home economics should not replace the major subjects now chosen, but should supplement them.

The problems of the home ought to be every woman's first interest, whether she attacks them in one individual home or as problems of municipal or of international housekeeping. Whether she is a homemaker, a scientist, a philosopher or a diplomat, these problems, in one phase or another, need, and will reward, her greatest powers of mind and spirit.

OUTLINE OF COURSES IN HOUSEHOLD ARTS, CHICAGO PUBLIC SCHOOLS

JENNY H. SNOW, *Supervisor*

COOKING

From the standpoint of the meal.

Grade 6

Laboratory Work

Learning equipment and method of measuring.

Individual dishes that may be used for breakfast.

Beverages—Cocoa, malted milk, postum, tea, coffee.

Fruits—Fresh, dried.

Related Work

Discussion of personal equipment.

Discussion of breakfasts. What children eat for breakfast. What may be eaten for breakfast.

Relative values. Which best for children.

Composition. Why cooked. Methods of cooking.

- Cereals—Rice, wheat, oats, corn. Economic and food value. Testing with iodine for starch. Difference between boiling and steaming.
- Planning and serving breakfasts. Simple meals, combining the dishes of preceding lessons. Work out cost of same. Setting table, cooking, serving as class work.
- Individual dishes that may be used for lunch. Discussion of luncheons.
- White sauce on toast. Thickening power of flour.
- Vegetables—Baked, boiled, steamed, creamed. Classification of vegetables. Study of composition and structure. Food value of vegetables. Reasons for cooking. Suitable seasons for each, relative cost, 8 or 10 vegetables to be used.
- Cream soups. Food value. Place in the diet.
- Planning and serving lunch. Selection to be made by girls from previous work. Buying supplies, cooking in large amounts. Setting table and serving simple meals to the class.
- Milk—Cottage cheese, junket, butter. Food values and digestibility of milk. Place in diet. Care by producer, retailer, and in home. Sterilizing and pasteurizing. Ways of using milk and cheese.
- Luncheon dishes—Macaroni, spaghetti, rice and cheese. Food value of dishes. Combination of starch and protein in cooking, principles involved.
- Eggs—Various ways of cooking, combining with milk in baked custard. Composition and food value. Test for fresh eggs. Commercial methods of keeping them. Thickening power of eggs. Cooking temperature.
- Planning and serving simple luncheons. Cost of luncheons.

Batters and Doughs—Popovers, muffins, drop biscuits, corn bread, ginger bread, griddle cakes, rolled biscuits, plain cake.

Bread—Preparation lesson.
Yeast experiments, making of bread.

Desserts—Corn starch pudding, gelatin.

Planning and serving luncheons.

Flour, various kinds and relative values. Washing, stretching and baking gluten. Difference between batters and doughs.

Stages in baking, oven tests. Experiments to show growth and best temperature for yeast. Methods of making bread. Comparing home versus baker's bread as to cost and value.

Thickening power of corn starch. Comparison with flour. Substituting one for the other. Source, food value, uses of starch and gelatin.

Serving a luncheon to guests.

Grades 7 and 8

Preservation of food—Canning vegetables and fruits, making jelly, pickling sweet and sour.

Vegetables—Fresh and dried, baked beans, escalloped, review of white sauce, buttered crumbs.

Salads and salad dressings.

Review Batters and Doughs, including cakes and cookies.

Syrups and icings.

Serving luncheons.

Individual dishes that may be used for dinner.

Study of bacteria, yeast and moulds. Use of sugar in canning. Other methods of preserving. Comparative study of fresh and dried fruits and vegetables.

Review method of cooking and food value.

Varieties, food values. Place in diet. Requisites for attractive and palatable salads.

Study of baking powder and soda.

Study of sugar, corn syrup. Food values. Place in diet.

Study of Langworthy chart. Planning meals.

Buying and cooking in large quantities and serving.

Discussion of dinner.

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| Meat, soup stock, various methods of cooking meats, use of left-overs. | Food values. Digestibility. Cost. Various cuts. Uses of each. Comparative food value and cost of tough and tender cuts. |
| Fish, fresh and salt. Use of left-overs, croquettes, balls, salads. | Digestibility and cost of fish vs. meat. Tests for fresh fish. Best varieties in this locality. |
| Bread, baking powder, yeast. | Each girl to have practice in making large loaf of bread. |
| Desserts, puddings, soft custards, floating island, tapioca and prune puddings, fruit rolls, bread and other puddings, pastry, tarts, pies. | Large corn starch pudding and baked custard to be made in review. Place of desserts in diet. Kind depending on rest of menu. Digestibility and food values of pastry. |
| Frozen mixtures, sherbet, ice cream. | Food value and place in diet. Principles and rules for freezing. Comparative cost and value of home vs. commercial ice cream. |
| Planning dinners, care of dining room. | |
| Serving dinners, cooking in large amounts. | Dinner served to guests. |

SEWING

Grade 6

APPLIED PROCESSES

Basting, hemming, overhanding, overcasting, running, gathering, back-stitching, combination stitch, chain stitch, feather stitch, machine practice for straight stitching, plain seam, French seam, putting on a band.

Stocking darning, mending, knitting or crocheting.

SUGGESTED PROJECTS

Towel, ovencloth, protection cloth, sewing apron without band, runner, holder, square or round.

Book cover, broom cover, bag (sewing, knitting, vegetable, laundry, slipper, etc.)

Machine Practice—Holders, wall pocket, silver case, scissor case, pencil case.

Half sleeves (elastic at top and bottom, band at bottom, plain hem).

Apron (cooking), cap (cooking).

Crochet—Scarf, turban, cap, hug-me-tight, mat, or edging.

Knit—Wash cloth, squares for afghan.

Gymnasium—Bloomers.

TOPICS FOR STUDY

Warp, woof, selvedge, weaving.

Art—Space relation in construction.

Study of line.

Simple pattern construction—Placing, cutting.

Grade 7

APPLIED PROCESSES

Blanket stitch, button-hole stitch, hemstitching, cross-stitch, cutting a bias-joining, sewing on lace, joining embroidery, facings (bias), flat fell seam, lapped seam, overhanded seam, plackets, hemmed, one-piece.

Sewing on buttons and fasteners.

Stocking darning, mending, patching, knitting or crocheting.

SUGGESTED PROJECTS

Night dress (kimono), kimono.

Cuffs—Collar.

Undergarments—Chemise, skirt, bloomers, corset cover, underwaist.

Middy, apron, simple dress skirt, fancy apron, serving apron.

Crochet—Slippers, cap, scarf.

Knitting—Scarf, bag, wristlets, runner, table cover, mats, pillow tops, bag.

TOPICS FOR STUDY

Study of suitable materials, shrinkage of material.

Art—Study of decoration, study of appropriate laces, width, texture, etc. Study of commercial patterns used.

Grade 8

APPLIED PROCESSES

Trimmings—Bias, piping, bands, collar, cuffs.

Mending—Knitting or crocheting.

SUGGESTED PROJECTS

Middy or smock, blouse, dress skirt, dress of simple construction, re-modeled garments.

Undergarments—Princess slip, drawers or Knickerbockers.

Bags, table covers, rugs, mats, pillow tops (applied decoration or woven).

Select at least one project having a set-in sleeve.

TOPICS FOR STUDY

Study of materials, care of clothing, simple removal of stains, simple tests for fiber.

Art—Horizontal and vertical lines or bands, commercial patterns, simple alterations.

HOUSEHOLD ARTS IN THE PUBLIC SCHOOLS, LEXINGTON,
KENTUCKY

ANNE SIMRALL, *Supervisor*

The Lexington Schools are unusually fortunate in having a Superintendent¹ of the City Schools and a Board of Education whose interest, inspiration, and help have enlisted the coöperation of pupils, teachers, and parents, and made possible the rapid progress in Household Arts that we have been able to make.

So many of our children leave school at the end of the sixth grade that we have tried to help as large a group as possible, and in order to do this we have offered the work each year in a grade lower than it was given in the preceding year.

We have 1½ hour periods once a week in the third, fourth, fifth, and sixth grades; 2 hours once a week in the seventh, eighth, and ninth grades (Junior High School); and 100 minutes a day in the eleventh grade (Senior High School).

¹ Mr. M. A. Cassidy.

Two years ago we introduced machine work in the sixth grade. This year in the third grade we have accomplished the same amount of practical work, in our short school term, that the Freshman High School girls accomplished four years ago, and, in two or three lessons, the same amount of work that was accomplished by the sixth grade year before last. Such a result indicates that we have not given girls a chance heretofore, or allowed them an opportunity to do the work in which they are so much interested.

In the very first lesson the children began to learn how to run the machine and how to thread it. We talked over the materials and utensils that would be needed and they decided to make a petticoat, because straight seams would be easier to learn on. In the next lesson they basted their skirts and most of them stitched them.

During these first few lessons I gave them a good deal of assistance; in fact, I stood by the machine and kept one foot on the treadle and helped them keep their work straight, to give them confidence. By the time they were ready for the hem and placket, they could go to the machine alone, thread it, stitch straight, and turn edges as well as anybody. All of them did not get it just right the first time, but we had our tension loose enough so that ripping it out was not too much of a task, and we decided in the beginning that anything worth doing was worth doing well.

By the time they had finished their skirts, they had acquired sufficient speed to make a night gown in much shorter time. One girl made it in one lesson, the majority in two, and a few spent three lessons on it. Between one third and one half the class made either bloomers or drawers. In the fall these girls will make dress and bloomers to match. We have made dress and petticoat in the fourth grade with no previous work.

This year, of course, the garments will be made better and in shorter time. The surprising part has been that the third grade group work better and are, if possible, more interested than the fourth grade. Our handwork has been the necessary basting, gathering, sewing on buttons, and making button-holes for the completion of the garment, and this has been so planned that the children may be able to do this when unable to get to a machine.

The equipment has been far from ideal in most of the schools. Sometimes the work has been done in school rooms with two machines, while the classes have had an enrollment of 15 to 40. In the large classes

we spent some time after school hours, but this could never be for very long, as my time had to be divided between so many schools; but all the work was done in the school building under supervision. Each girl has promised to make at least one garment alone during the summer and bring it in the fall for inspection. Quite a number have been promised machines by their fathers.

This year the children made their cooking outfits and an undergarment in the fifth grade, but this fall we hope to have this done in the fourth grade after the dress and bloomers have been completed, and we plan to begin our food work in the fifth grade instead of the sixth. All our food work is given with the meal as a basis, and in the sixth grade we begin with planning a simple breakfast, luncheon, and supper, and then prepare and serve dishes suitable for these meals. Several times during the term, the class prepare and serve meals.

In Junior High School the pupils have some choice, but we try to see that they get an equal amount of time in clothing and in food work. Our work in home management and laundry is given in connection with the food work, and the clothing budget is given with clothing work. Because of limited space and equipment we have not been able to develop the work that we hope to give when we get our new building.

Year before last, with Miss Sweeney at the head of the Home Economics Department of the University of Kentucky, part of our Senior High School work was given in the University Practice House. Last year, while Miss Sweeney was in France, the acting head did not think this was desirable; hence all of our work was limited to our school laboratories. We used the "Ellis Method of Household Accounting" and planned our food work on the basis of the families studied. More emphasis than before was placed on dietetic work and on the selection and cost of food, and the time necessary for its preparation. The clothing work included the clothing budget, cleaning, dyeing, laundering, repairing, renovating, and remaking garments.

The girls were so interested that nearly every girl in Senior High School that could arrange her schedule, was registered in our department for an elective course and many took every course that was offered. Our household arts work receives the same credit that any other subject receives, and the year of Junior work is compulsory.

SOME SUGGESTIONS FROM THE TEXTILE SECTION

MIRIAM BIRDSEYE

Chairman, Committee on Standardization of Textile Fabrics

At the recent annual meeting of the American Home Economics Association at Blue Ridge, North Carolina, the Textile Section proposed and secured the adoption of the two important resolutions quoted below:

WHEREAS, We as home economics teachers realize that women form the bulk of retail purchasers of textile fabrics, and whereas we believe that in the interests of efficient homemaking and of individual and national thrift they should be trained to select such fabrics with discrimination and to study expenditures for clothing in relation to income; therefore be it

Resolved, That this Association urge all teachers of clothing in elementary and high schools, vocational schools, normal schools, and colleges, and all home economics extension staffs to feature the selection of textile fabrics and the clothing budget in their courses of instruction during the coming year; and further, that it request the active coöperation of the General Federation of Women's Clubs and of women's magazines and farm journals in bringing these matters to the attention of American women and girls.

AND WHEREAS, We believe that a large percentage of American women are ready today to create and maintain a market for textile fabrics conforming to reasonable standards, and know that we can readily reach these women and others through the various types of home economics teaching in which our members are engaged; be it

Resolved, That this Association invite the coöperation of associations of manufacturers, jobbers, and retailers, in determining such standards, and in putting on the market a limited number of standardized fabrics of various grades on which is placed some identifying symbol to signify such standardization.

The first resolution grew out of reports made by two committees appointed the previous year to consider respectively (1) the extent to which courses in textiles and clothing in high schools, normal schools, and colleges were being used to teach girls to buy wisely clothing and household furnishing materials, (2) the content of household arts courses in graded and high schools. Both of these reports indicated that much more time and attention should be devoted to the clothing budget and to clothing selection than is being given at the present time in the majority of schools.

It seems reasonable to suppose that in household arts courses the study of textiles is undertaken not primarily for its historical, economic, or aesthetic interest, but chiefly for the purpose of teaching the students how to secure, with the part of their income that may legitimately be expended for clothing and household textiles, a greater amount of real satisfaction than would be possible without the understanding of needs and values gained from the course. To fail to use textile work to develop such power in the student is to be like a gardener so absorbed in weeding and watering that he neglects to pluck the fruit which is the goal of all his effort.

The first resolution, with its emphasis upon clothing selection and the clothing budget, is a peculiarly timely one. Never before has there been such a year for the teaching of clothing. The stage is set with a magnificent disregard of expense that will never, let us hope, be repeated. It is only twelve months since, in a war crisis, the government was calling upon people everywhere to give their thought and time to clothing conservation, and women who had never made over a garment sat at the feet of their more experienced neighbors or of extension teachers and tasted the moral and economic reward that comes from making a promising cast-off make good its promise. Women will remember that sensation all the longer because the high price of ready-made clothing makes sensible remodeling financially more profitable than ever before. In contrast many women are buying more lavishly than they have ever done. War profits and war wages burn in the pockets of men and their families and of the thousands of young women in clerical and industrial positions who are receiving real money for almost the first time in their lives. The advance in the standard of living is marked more by the way people dress than by any other symptom. Even the most prudent are replenishing their wardrobes after two years of war self-denial; and the unprecedented rush of buying is sending prices sky-rocketing with no prospect of an immediate drop. In many families incomes have not risen to keep pace with rising living costs, and women are asking guidance in making the clothing allowance accomplish the well-nigh impossible. Because of the scarcity and high cost of raw material, qualities in many lines have been reduced and fabrics and garments purchased at high prices have a tendency to fall to pieces on our very backs in a way that makes us feel that some kind of clothing insurance would be a profitable investment.

Under these unusual and often contradictory conditions, the teacher of clothing has the opportunity to become a leader and guide just as the

teacher of foods was leader and guide during the war emergency. All that is needed is the vision, with the skill and determination to make the vision come true. This is no time for theorizing or for harking back to the past, except as the past has lessons for today. The teacher of textiles and clothing should take counsel with her students and their mothers and with other thoughtful women in her town as to the problems they are facing, and should shape her course of study to give the help that is needed. Only close contact with the home and its problems will enable her to make her teaching fit the times.

"Standardization of textiles," as outlined in the second resolution, i.e., putting on the market certain lines of fabrics in wool, cotton, silk and linen guaranteed by associations of manufacturers as having passed certain standard tests for durability and other qualities; and privileged to bear a symbol devised by the Association to signify such standardization, might perhaps be likened to a device for taking out clothing insurance. As reliable insurance benefits all parties concerned—the insured, the company, and the agent—so this standardization scheme should be made to work for the mutual benefit of consumer, manufacturer, and merchant. In these days of uncertainty intelligent women are likely to be willing to pay well for a fabric guaranteed to have been prepared with maximum knowledge and skill for the purpose it is intended to serve. It was with this thought, and with the knowledge that through our various fields of teaching—the schools, the extension field, women's clubs, and women's publications—we can bring an idea quickly to the attention of thousands of women that the second resolution was proposed. It was anticipated, however, that if it proved feasible to bring about some such standardization, the thing could not be done in a moment, but must be accomplished through a sane and constructive movement that would begin modestly and gather force through the years.

For this reason the second resolution cannot be commented upon at the present time with the same definiteness as can the first. A Central Committee on Standardization of Textile Fabrics has been appointed: Miriam Birdseye, States Relations Service, United States Department of Agriculture, Chairman; Mrs. Mary Schenck Woolman, Boston, Massachusetts; Mrs. Ellen B. McGowan, Teachers College; Zella E. Bigelow, Federal Board for Vocational Education; Florence Winchell, The Lincoln School, New York City; Mabel Trilling, University of Chicago (Chairman, Textile Section, A. H. E. A.).

The chairman intends also to appoint an advisory committee with at least one representative from each state, who will coöperate in her own

locality by carrying out specific suggestions made by the Central Committee. It is thus hoped to secure the help and advice of a large number of well trained textile women, although the Central Committee must of necessity be a small body whose members can reasonably hope to get together at intervals.

The Central Committee has already begun a study of the textile market. As was anticipated, the situation is a complicated one. Some of the elements seem to be as follows: an unprecedented labor turn-over resulting in irresponsibility and temporary inefficiency on the part of many employees in the textile and garment trades; a tremendous volume of buying by consumers, resulting in competition among retailers for the output of factories scarcely able to keep up with domestic orders; large foreign demands on American markets; high prices of certain raw materials; the dye situation not as yet entirely resolved. All these conditions are agitating the market, which resembles nothing so much as a boiling, seething caldron.

This probably means that no work on standardization on a large scale is in order until conditions have somewhat steadied themselves and certain preliminary work has been done. The committee hopes to report in coming numbers of the JOURNAL the progress it makes in its investigations.

In the meantime it would like to suggest that it is quite evident our best route is through the consumer and the retailer to the manufacturer. Apparently the first steps should be to influence the girl and the woman who spend to regulate their purchases of clothing by a simple budget system, to teach them to consider the qualities they should demand in fabrics for certain uses, and to give them the habit not only of making the usual simple textile tests but of recognizing and patronizing such lines of fabrics carried by local stores or manufactured in local mills as have already been standardized to a certain degree by their producers.¹

In the store where quality is a watch word, there will be found certain lines of cottons, silks, and woolen goods that have been handled for years and have given universal satisfaction. An experienced salesman or buyer of the department can speak with authority about such goods. For example, in such a store one can still find silks, selling at nearly double their price of two years ago, it is true, but of the original excellent quality, which if made up into petticoats will outlast any three of

¹ In this connection see "Teaching the Clothing Budget." by Janet G. Cation, *Jour. Home Econ.*, December, 1918, and "Textile Lessons for Homemakers," by Grace G. Denny, *Jour. Home Econ.*, June, 1919.

the "bargains" in silk petticoats displayed by the same store at various sales. The line of colors will not be as complete as in some of the novelty lines but the wearing quality and the style are there.

The same thing is true of many cotton materials. sold by name and still true to the standard maintained for many years, although the price has risen.

Every girl and every girl's mother should learn what these lines of goods are, becoming familiar with the name of the maker as well as with the trade name, and listing these fabrics under the purpose for which they are best fitted. The names in such lists will differ in different parts of the country, according to the source of supply, but every reliable store can be counted upon to give interested assistance in making out such a list. In this connection the clothing instructor should cultivate the acquaintance of the merchandizing manager, and should secure from him an introduction to his buyers. It need not be added that any work with retail stores should be undertaken in a spirit of the fullest coöperation, and any studies made should have a thoroughly constructive object.

Among fabrics for which standardization might be considered are cottons for underwear; silks for underskirts, tailored shirt waists, and dresses; wool and cotton goods for school dresses, and cottons for children's play clothes. The chairman of this committee will be glad to receive copies of lists representing class judgment and class tests on such fabrics, especially when the tests include data regarding actual wearing quality, as, for example, date of purchase, use, kind of wear, method and frequency of laundering, and length of service. Cotton and silk stockings might well be included in such practical tests, and incidentally, interesting experiments might be planned to show the effect of careful and careless laundering on the life of such fabrics. The value of such a list will be greatly augmented if it is supplemented by a list of uses for which standardized fabrics are not locally procurable, and for which in the judgment of the class some standard fabric should be provided.

The committee on standardization hopes to contribute from time to time or to secure for publication in the JOURNAL articles of interest in connection with the two resolutions quoted at the beginning of this paper. It will welcome correspondence or suggestions from teachers or from homemakers interested in these subjects.

FAT ABSORPTION AND DECOMPOSITION IN FRYING

Three papers dealing with absorption and decomposition of fat in frying were presented at the meeting of the American Home Economics Association at Blue Ridge. One by Agnes Fay Morgan and Ella Rau Cozens, is published in this issue. The others, by Sybil Woodruff and Katharine Blunt, and by Elizabeth Sprague will appear later. Dr. Morgan's and Miss Woodruff's papers both give figures on fat absorption and all three include results on fat decomposition. Dr. Morgan notes the differences in a number of the fat constants between the original fat and that left in the pan after frying. Miss Woodruff's gives changes in a smaller number of constants—iodine number, acidity, and relative quantity of reducing substances, such as acrolein,—both for the fat left in the pan and for that extracted from the fried foods. Miss Sprague reports the temperatures at which acrolein is given off from the fats. Thus the decomposition of the fat is observed from three different angles.

In considering parts of these papers, the less chemically minded readers of the JOURNAL will be glad to be reminded of the significance of some of the fat constants discussed. Comment is hardly necessary on the acidity, the very small amount of free acid in the fat. The slight increase in this during frying is probably due to very slight hydrolysis of the glycerides, though it might also come from other kinds of splitting. The figures for expressing acidity used by Morgan and Cozens—milligrams of KOH used to neutralize 1 gram of the fat—may be changed approximately to percentage of acidity by dividing by 2. (See Sherman's Organic Analysis p. 147, or Leach p. 500.)

The iodine number is a measure of the unsaturated glycerides present, olein, linolein, etc. Decrease in this constant therefore means saturation of some of these double bonds, or splitting of the molecules at these bonds, and is probably due to oxidation.

The significance of the slight decrease in refractive index is less clear. It may be due to some splitting of these molecules or to removal of double bonds. Direct addition of oxygen, on the other hand, without splitting, seems usually to raise the refractive index.

The JOURNAL is aware that other workers have material on fat absorption and decomposition and therefore hopes that the publication of these three papers may lead to discussion and presentation of other data.

The chemical side of experimental cookery, illustrated by these papers, is one of the lines it is desirable to further by the coöperative research discussed in the Science Section of the A. H. E. A.

KATHARINE BLUNT,
Chairman, Science Section.

CHANGES IN PHYSICAL AND CHEMICAL CONSTANTS OF FATS USED FOR FRYING A STANDARD DOUGH

AGNES FAY MORGAN AND ELLA RAU COZENS

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The double problem of the conditions governing the absorption of fat by fried foods and of the effect upon fats of their use in frying has so far scarcely been attacked. The impression which has long prevailed that considerable hydrolysis occurs in fats which have been heated to a high temperature has not been well grounded in experimental data, nor has any special effort been put forth to disprove what has been for some time recognized as at least an exaggeration. Moreover, the differences in physical and chemical properties of fats which have been merely heated, and those which while hot have been used for frying foods have not been sufficiently studied to warrant any generalizations including both classes.

The work of Mary McKee¹ upon the absorption of fat in frying doughnuts of varied composition was apparently the first attempt to fix certain conditions while varying others, in order to discover the factors which govern the amount of absorption of fat in frying food. The number of variables in this problem is relatively small, and the discovery of the governing factors should be therefore relatively easy.

The variables are (1) nature, both physical and chemical, of the fried food; (2) physical and chemical characters of the fat; (3) temperature of frying; (4) length of time of frying. The maintenance of suitable control experiments in which all conditions but that to be tested are reproduced is, of course, indispensable.

Under the first of the variables should be included particularly the content of fat, water, protein, sugar, salt, starch; the shape, surface exposed, weight, density, of the food used for frying.

¹ McKee, M. C., Fat Absorption in Frying Doughnuts. *Jour. Home Econ.*, 10 (1918), pp. 18-20.

Under the second should be included the usually determined physical and chemical constants of fats, particularly the iodine number, acidity, melting point, index of refraction, Reichert-Meissl and saponification numbers.

The temperature of the fat used in a single set of frying experiments should be maintained carefully at a given value, and the length of time of frying each sample of food should be either fixed or varied as the experiment requires.

It is evident that of all these changeable conditions those relating to the nature of the food fried are most apt to produce definite effects upon the amount of fat absorbed. It is possible that fat absorption under these conditions is not unlike the imbibition of water by colloids, and that the proportion of water and molecular solutions of salt or sugar, as well as of fat, and colloidal substances such as gluten or starch, may govern the permeability of the mixture by the hot fat.

It has long been known by practical cooks that fat of too low temperature will be absorbed in an undesirable manner, if not undesirable amount, by food mixtures fried therein. This effect may, of course, be due to the absence of the immediate surface hardening which hot fat produces, and to the accompanying change in water and solution content of the outer layer of the food.

In the study here reported the character of the food fried, the temperature and time of frying were kept constant, the nature of the fat only being varied. Moreover certain physical and chemical constants of the fats were determined before and after frying, as well as before and after simple heating in some cases. It was hoped that any selective absorption of certain glycerides might thus be detected.

Fulmer and Manchester² reported certain changes particularly in the iodine number, refractive index, and free fatty acids, of cottonseed oil heated to 220°C, and noted that these changes were dependent upon the time, as well as temperature of heating. Below 220° they discovered no increase in free fatty acids, but above that temperature the acidity increased rapidly.

Blunt and Feeney³ in their study of smoking temperatures found that fat which had been used in cooking had both a lower smoking point and a higher acidity than fresh fat.

² Fulmer and Manchester, *Jour. Amer. Chem. Soc.*, 30 (1908), p. 1477.

³ Blunt, K. and Feeney, C., *Jour. Home Econ.*, 7 (1915), pp. 535-541.

Masters and Smith⁴ determined the usual physical and chemical constants in fresh cottonseed oil and butter and in samples extracted from pastry baked in an oven maintained at 200°C. The iodine values showed a decrease, the acetyl value and refractive index an increase, and the acidity a slight increase. The authors conclude that the first change in heated fats may be the hydroxylation of the unsaturated molecule, a change identical with that observed in the blowing of oils. The oxidation is apparently measurable only when the fat is considerably overcooked, or used in very thin pastries with large surface exposure.

I. ABSORPTION OF VARIOUS FATS BY A STANDARD DOUGH

1. *The food used as standard for frying*

In the present study a standard doughnut dough made according to the following recipe was used throughout all experiments.

| MATERIALS | GRAMS | MEASURE |
|--|-------|---------------------|
| Butter..... | 6 | $\frac{1}{2}$ tbsp. |
| Egg..... | 11 | 3 tbsp. |
| Sugar..... | 50 | $\frac{1}{2}$ c. |
| Baking powder..... | 4 | 1 tsp. |
| Salt..... | 1 | $\frac{1}{2}$ tsp. |
| Flour..... | 148 | 1 $\frac{1}{2}$ c. |
| Milk (evaporated milk and water 1:1.)..... | 57 | $\frac{1}{2}$ c. |

The doughnuts made from this dough were rolled out to a uniform thickness of one-half inch, and cut in every case with the same cutter, two and one-half inches in outside diameter.

2. *Time and temperature of fat used in frying*

Each fat was used for frying at 205°C. and 210°C., the time being three minutes in each case. The fat was not allowed to vary more than one degree above or two degrees below the stated temperature throughout the frying.

3. *Fat and water analysis of dough and doughnuts*

Two sets of duplicate samples of the dough were taken immediately after rolling out for drying and for fat extraction by the Soxhlet method.

⁴ Masters, H. and Smith, H., *The Analyst*, 39 (1914), pp. 347-350.

Care was taken in the latter process to use specially purified ether, and to extract for at least twenty-four hours.

After the frying the doughnuts were allowed to drain for a few moments, then transferred to a covered dish with an outlet for the steam. After exactly an hour two sets of duplicate samples for fat and water determinations were removed and treated as were the dough samples.

The results of these determinations are summarized in table I.

TABLE I
Percentage of various fats absorbed by a standard dough

| FAT | FAT CALCULATED TO WATER-FREE BASIS | | | FAT ABSORBED | |
|---------------------------------|------------------------------------|--------------------------|--------------------------|-----------------|-----------------|
| | Dough | Doughnut fried at 205°C. | Doughnut fried at 210°C. | At 205°C. | At 210°C. |
| | <i>per cent</i> | <i>per cent</i> | <i>per cent</i> | <i>per cent</i> | <i>per cent</i> |
| Lard..... | 6.74 | 22.86 | 24.84 | 16.12 | 18.10 |
| Olive oil..... | 7.95 | 30.36 | 27.96 | 22.41 | 20.01 |
| Crisco..... | 6.70 | 30.58 | 28.46 | 23.88 | 21.76 |
| Cottolene..... | 7.37 | 27.44 | 30.58 | 20.07 | 23.21 |
| <i>Using fresh weight basis</i> | | | | | |
| Lard..... | 4.49 | 17.77 | 19.36 | 13.28 | 14.87 |
| Olive oil..... | 5.47 | 24.40 | | 18.93 | |
| Crisco..... | 4.57 | 25.53 | 22.85 | 20.96 | 18.28 |
| Cottolene..... | 4.94 | 21.73 | 24.36 | 16.78 | 19.92 |
| Average | | | | 17.49 | 17.36 |

4. Fat absorption

There is apparent no relation between the temperatures of frying and the amount of fat absorbed where the variation is as slight as from 205°C. to 210°C.

The quantity of fat present in the finished doughnuts is considerably less than that reported by Miss McKee, an average of 17.4 per cent of the fresh weight as compared with the 34.7 per cent reported by the former investigator. The difference in composition of the dough can scarcely account for so large a variation, since the recipes used were almost identical, as indicated by the following comparison:

Comparison of recipes

| MATERIALS | MCKEE RECIPE | RECIPE USED IN PRESENT STUDY | DIFFERENCE | |
|--------------------|---|---------------------------------------|------------|-------------------|
| | | | Grams | Measure |
| | <i>grams</i> | <i>grams</i> | | |
| Sugar..... | 300 | 300 | 0 | 0 |
| Egg..... | 84 | 66 | 18 | $\frac{1}{2}$ c. |
| Fat..... | 34 | 36 | 2 | 0 |
| Baking powder..... | 25 | 24 | 1 | 0 |
| Milk..... | 340 | 352 | 12 | 0 |
| Flour..... | 681 plus 28 used in rolling out dough | 888 | 179 | $1\frac{1}{2}$ c. |
| Salt..... | Not given | 1 | | |

It will be noted that the only differences lie in the proportion of egg, there being $\frac{1}{2}$ cup, or $\frac{1}{2}$ of the amount of egg less in our recipe than in the standard dough described by Miss McKee, and in the flour, of which we used $1\frac{1}{2}$ cups, or one-quarter, more. Our doughnuts were light, fluffy, and sufficiently sweet and crisp to be entirely palatable.

The results obtained in our study approximate more closely than did Miss McKee's the percentage of fat present in the doughnuts usually offered for sale by bakeries, and that given in the Bulletin of the Department of Agriculture,⁵ 21.0 per cent.

II. CHANGES IN PHYSICAL AND CHEMICAL CONSTANTS OF THE FATS USED IN FRYING DOUGHNUTS

Samples of the fresh fats and of those in which six of the doughnuts described above had been fried were tested for iodine value, melting point, refractive index, and acidity.

1. The iodine absorption number

The Hanus⁶ method was used, and especial care was taken to keep the solutions at uniform temperature throughout the operations. The results obtained fall within the limits given by Lewkowitsch,⁷ and show a decrease of 0.2 to 2 per cent in the amount of iodine absorbed by the

⁵ The Chemical Composition of American Food Materials, U. S. Dept. Agr., O. E. S. Bulletin 28.

⁶ U. S. Dept. of Agr. Bur. of Chem., Bulletin 107, pp. 136-137.

⁷ Lewkowitsch, Chemical Technology and Analysis of Oils, Fats and Waxes. 1913, v. I, p. 410.

fats after being used. There appears no definite relation between the change in the iodine number and the per cent of fat absorbed by the doughnuts. In order to discover whether any relation exists between the amount of dough exposed to the hot fat and the decrease in iodine number, fourteen doughnuts in succession were fried at 210°C. for three minutes in a sample of crisco, as compared with the six previously used. The length of time of heating was thus increased in proportion also, since the same vessel and amount of fat were used in each case, and only one doughnut was fried at a time. The result showed a decrease in the iodine number of 1.26 per cent as compared with the 0.23 per cent previously obtained. Table 2 summarizes these data.

The results here given are in accord with those obtained by Masters and Smith.⁸

TABLE 2

Changes in iodine number of fats used for frying a standard dough

| FAT | FRESH | AFTER FRYING SIX DOUGHNUTS | DECREASE |
|----------------|-------|---------------------------------------|----------|
| Lard..... | 65.04 | 63.04 | 2.00 |
| Olive oil..... | 83.72 | 82.20 | 1.52 |
| Crisco..... | 78.03 | 77.80 | 0.23 |
| Crisco..... | 75.29 | 74.03 | 1.26 |
| | | AFTER FRYING FOURTEEN DOUGHNUTS | |
| Cottolene..... | 94.51 | 93.67 | 0.84 |

TABLE 3

Changes in melting points of fats used for frying a standard dough

| FAT | FRESH FAT | AFTER FRYING SIX DOUGHNUTS | DIFFERENCE |
|----------------|-------------------|----------------------------------|-------------------|
| | <i>degrees C.</i> | <i>degrees C.</i> | <i>degrees C.</i> |
| Crisco..... | 38.0 | 36.2 | 1.8 |
| Cottolene..... | 43.8 | 43.6 | 0.2 |
| Lard..... | 44.0 | 43.1 | 0.9 |

2. Melting point

The melting points of the fresh and used fats were determined by drawing the fat into capillary tubes in the usual manner, the melting

⁸ Loc. cit.

point being taken twelve hours later in each case. The melting points were lowered by use as shown in table 3.

3. Index of refraction

The Zeiss butyro refractometer⁹ was the instrument used, the hard fats being maintained at a temperature of 40°C. while the oil was maintained at 19°C.

The formula R equals R_1 plus $0.55 (T - T_1)$ was used in which R is the reading reduced to T , R_1 the reading at temperature T_1 , T the standard temperature, and 0.55 the correction for 1°C. in scale divisions. For the oil, the factor 0.58 was used.

TABLE 4
Changes in the refractive indices of fats used for frying a standard dough

| FAT | FREE FAT | AFTER FRYING SIX DOUGHNUTS | DIFFERENCE (N) _D 40°C. | FAT ABSORBED BY DOUGHNUTS CALCULATED TO WATER-FREE BASIS | |
|----------------|----------------------|----------------------------------|--------------------------------------|--|--------|
| | | | | 205°C. | 210°C. |
| Lard..... | 1.4601 | 1.4603 | 0.0002 | 16.12 | 18.10 |
| Olive oil..... | 1.4621 (At 18.8°) | 1.4622 | 0.0001 | 22.41 | 20.01 |
| Crisco..... | 1.4622 | 1.4627 | 0.0005 | 23.88 | 21.76 |
| Cottolene..... | 1.4640 | 1.4641 | 0.0001 | 20.07 | 23.21 |

It is interesting to note that the refractive indices and amount of fat absorbed by the doughnuts are parallel, the fats absorbed in larger amounts showing higher refractive indices, and also larger increases in these numbers. It is obvious that the refractive index of a fat must be dependent upon its chemical constitution, and that any change indicated by a decrease in the iodine number will be reflected in the refractive index.¹⁰

4. Free fatty acid content

The method used was the usual one of titration of the fat in 95 per cent alcohol solution against N/20 sodium hydroxide, phenolphthalein being used as indicator. The temperature was maintained at 60°C. The results are given in table 5.

⁹ U. S. Dept. Agr. Bur. of Chem. Bulletin 107, p. 132.

¹⁰ Heim, F., *Bull. Agr. Intelligence*, 7 (1916), pp. 1529-1532.

TABLE 5

Changes in the free fatty acid content of fats used for frying a standard dough

| FAT | FRESH FAT | AFTER FRY- ING SIX DOUGH- OUTS | INCREASE | PER CENT INCREASE | PER CENT FAT ABSORBED CALCULATED TO WATER-FREE BASIS | |
|----------------|-----------------|---|----------|----------------------|---|-------|
| | KOH per gram | KOH per gram | | | 205° | 210° |
| | mgm. | mgm. | | | | |
| Lard..... | 1.095 | 1.134 | 0.041 | 3.7 | 16.12 | 18.10 |
| Olive oil..... | 0.719 | 0.823 | 0.104 | 14.4 | 22.41 | 20.01 |
| Crisco..... | 0.350 | 0.389 | 0.039 | 11.2 | 23.88 | 21.76 |
| Cottolene..... | 0.173 | 0.207 | 0.034 | 19.6 | 20.07 | 23.21 |

Here again it may be seen that a relation seems to exist between the quantities of fat absorbed by the doughnuts and the acidity of the fats, the fats having least acidity being absorbed to the greatest extent.

In order to discover whether heating alone may account for the increased acidity of the fats, samples of these fats were heated alone at the same temperature and for the same length of time as that consumed in the frying. The acidity was then determined as described above. Table 6 gives the results thus obtained.

TABLE 6

Changes in the free fatty acid content of heated fats

| FAT | FRESH FAT | AFTER HEATING | DIFFERENCE |
|----------------|--------------|---------------|------------|
| | KOH per gram | KOH per gram | |
| | mgm. | mgm. | |
| Lard..... | 1.09 | 1.04 | -0.05 |
| Olive oil..... | 0.71 | 0.73 | +0.02 |
| Crisco..... | 0.34 | 0.30 | -0.04 |
| Cottolene..... | 0.17 | 0.14 | -0.03 |

Thus it will be seen that heating the fats alone does not bring about consistently increased acidity as does heating in the presence of food. These results are comparable with those reported by Masters and Smith and must be explained as showing both an increased surface hydrolysis and oxidation and a possible catalytic action of the flour mixture upon the hot fats.

CONCLUSIONS

It is evident that much more work remains to be done before any definite information can be obtained concerning the conditions governing the absorption of hot fat by flour mixtures. But from the limited data available it may be stated that:

1. There is considerable variation in the amount of different fats absorbed by a standard dough mixture, fried at a constant temperature for a fixed length of time. The data obtained do not support the claims of relatively lower absorption made for proprietary fats.

2. The fats used for frying a given quantity of the standard dough showed consistent decreases in iodine number, lowering of melting points, and increases in acidity and refractive index. All of these changes point to partial hydrolysis and oxidation of the fats.

3. Fats heated alone for the same length of time as those used for frying show no consistent change in acidity, but considerable decrease in iodine number. This indicates some oxidation, but uncertain hydrolysis, due to heating alone.

4. Some relation seems to exist between quantity of fat absorbed by the dough fried at 210°C. and acidity of the fat. Since the larger amounts of absorption occur in the case of the less acid fats there would appear to be either a selective absorption of the unchanged glycerides or a decreased permeability of the dough due to the action of the free fatty acids.

In general, the increase of acidity after the frying is greater in those fats showing the larger amounts of absorption.

FOR THE HOMEMAKER

HOME ECONOMICS AND CHILD WELFARE¹

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When the American Home Economics Association was formally organized at Washington, D. C., December, 1908, it stated as its object, "the improvement of living conditions in the home, the institutional household, and the community"; and, further, mentioned the specific means by which it aimed to fulfil its purpose: "By the study of problems connected with the household; by securing recognition of subjects related to the home in the curricula of existing schools and colleges; by securing the establishment and standardization of professional courses and schools for the training of teachers, and of home, institutional, social, and municipal workers; by encouraging and aiding investigations and research in universities, and by the State and Federal governments; by publications professional and popular, and by meetings, local and national, that knowledge may be increased, and especially that public opinion may be informed and advancement made secure by legislative enactment."

In regard to membership, the Association was made widely inclusive, the following being eligible: "All professionally concerned with this field as teachers of domestic science and art, home and institutional economics, and allied educational fields; students, investigators, housekeepers, institution managers, social and municipal workers, interested housewives and homemakers; professional workers in allied fields, as educators, physicians, hygienists, sanitary experts, architects, and others; clubs, associations, societies, and institutions interested in the work of this Association."

Only one condition as to eligibility for membership was made, namely "active interest"—members must be "actively interested in home problems."

¹ Presented at the Twelfth Annual Meeting of the American Home Economics Association, Blue Ridge, N. C., June, 1919.

The American Home Economics Association did not represent a new movement, nor was it entirely a further development of the National Household Economic Association, nor of the Lake Placid Conference on Home Economics. The home economics movement is as old as the home itself; the first home economics association consisted of the two women, whoever they were and wherever they were, who first exchanged "tested" recipes or confided to each other their discoveries in the matter of labor-saving devices or the utilizing of left-overs. These two women, moreover, were no doubt quite as scientific as women one occasionally meets even at the present time, who tell us that they "know nothing (or care less) about calories but *can* cook." In short, every house-keeper is vitally interested in home economics, and a home economics association is simply a socialization of that vital interest.

When the Children's Bureau was established by Act of Congress in April, 1912, it was directed by law "to investigate and report . . . upon all matters pertaining to the welfare of children and child life among all classes of our people . . . especially . . . the questions of infant mortality, the birth rate, orphanage, juvenile courts, desertion, dangerous occupations, accidents and diseases of children, employment (and) legislation affecting children in the several States and Territories."

In the seven years of its existence the bureau has issued, exclusive of annual reports, 53 publications, the majority of them the results of studies made of the conditions surrounding children and child life in certain selected sections of the country. Six others are in press; and ten others in preparation.

One group of studies is concerned with the problem of infant mortality, nine of these being intensive studies of the problem of infant mortality in selected cities, namely, Johnstown, Pennsylvania; Montclair, New Jersey; Manchester, New Hampshire; Waterbury, Connecticut; Saginaw, Michigan; Akron, Ohio; New Bedford and Brockton, Massachusetts; and Baltimore, Maryland. These intensive studies brought to light certain fundamental facts in regard to the causes of infant deaths, and the means whereby they may be prevented. Among the causes, two are outstanding: low family income and ignorance on the part of the mother and father.

Another group of studies made by the bureau has to do with the condition of children in rural communities. The results of three such studies have been published; they were made respectively in rural counties of Kansas, North Carolina, and Montana. Again, these studies

bring clearly to light the fact that insufficient money or insufficient knowledge is responsible for the loss of life, the absence of health, and the inadequacy of those other necessities, education and recreation, among the children of the rural sections of our country.

These rural studies concern themselves not only with the condition of children, but also with a subject which is more intimately and more vitally related to the welfare of children than any other subject whatever—maternity care. The health and strength of the infant depends upon the health and strength of the mother; the care of the mother during the nine months preceding the birth of a child very largely determines not only the well-being of that child, but its life or death. A report on Maternal Mortality from All Conditions Connected with Childbirth, published by the Bureau, discusses this important subject in detail. And, again, the conclusion reached is that poor prenatal and maternity care, or none, can almost invariably be attributed to poverty or ignorance in greater or lesser degree.

Another group of studies made by the bureau is concerned with the condition of children who, because they are dependent, defective, or delinquent, require special care, either in their own homes or in suitable institutions. And here, again, it becomes apparent not only that many such children are not receiving the care they need, but that the reasons are, once more, poverty and ignorance.

A group of studies bearing upon the problem of the child in industry has been made by the bureau. Three intensive studies of children prematurely employed (in North and South Carolina, in Rhode Island, and in Biloxi, Mississippi) once more make clear that family need and parental ignorance are among the basic causes of child labor. Great numbers of children were put to work because their fathers could not earn enough to support their families, and great numbers of children also went to work because their parents did not know the value, to children, of education.

Indeed, one may say that all the intensive studies of the Children's Bureau have shown that economic pressure and ignorance are at the root of practically all the unfortunate conditions in which children are living (or dying) in this country; and that child welfare includes higher wages for fathers, mothers' pensions, and the education of both fathers and mothers in infant care and child care and in the prime importance of giving such care in all its details.

How is this necessary work to be done? That half of it which has to

do with the securing of an income sufficient to maintain a healthful standard of living can only be accomplished by an unflagging effort on the part of all persons to educate themselves in regard to economic justice—and to act on their education. There need be no vague nor over-individualistic efforts to this end: such work is already being done through existing organizations which have the confidence and respect of the community, such as the National Consumers League, the National Child Labor Committee, the National Woman's Trade Union League, the American Federation of Labor, and other similar organizations.

As for the ignorance of parents—how is this to be met and overcome? There is only one means, and that is education through coöperation, the coöperation of individual specialists, of organizations, and of the parents. Some part of this work has been and is being done by the Children's Bureau, through its studies and the circulation of the reports based upon those studies. Other bureaus and organizations also are doing such work, through their several means and methods. Only through the coöperation of all can full results be obtained—and obtained speedily.

The Children's Bureau is in a position to speak with some authority upon the effectualness of such mutual coöperation, for the reason that it has had this coöperation in very great measures, and with noteworthy results. The work of Children's Year, which it undertook in coöperation with the Child Conservation Section of the Council of National Defense, furnishes a notable example. Not only did the bureau and the Council of National Defense coöperate in Children's Year, but the General Federation of Women's Clubs, the Red Cross Society, State and County Boards of Health, Instructive Visiting Nurses Associations, Baby Welfare Organizations, and smaller and more local associations of many types: all these coöperated. During the weighing and measuring test a minister in a typically American suburban parish was asked what work the Ladies Foreign Missionary Society of his church was engaged in just then, and he replied: "The ladies who are not weighing and measuring babies are making a local birth registration test, and the president of the society is getting up a child welfare conference."

At the request of the President of the United States, the Secretary of Labor called a meeting in Washington, in May of this year, of the Children's Bureau Conference on Child Welfare Standards. Not only many American authorities on the subject of child welfare, but representatives of Belgium, France, Great Britain, Italy, Japan, and Serbia

were present. The foreign delegates reported especially upon what their nations had learned as a result of their war experiences, concerning the welfare of children. The American experts discussed the National Standards which were recommended by the three following sections into which the Washington Conference was divided: (1) Public protection of life of mothers and children; (2) Child labor and education; (3) Children in need of special care.

At a general section of the Conference, economic and social aspects of child welfare standards were discussed, and an adequate wage for the father, wholesome living conditions, proper recreation, and the abolition of racial discrimination were recognized as fundamental in any child welfare problem.

Minimum Standards were formulated by the Conference; these standards actually are minimum, and in no way define the measure of protection which an advanced state or community might wish to give its children.

These standards will be "submitted;" the great point is, submitted to whom? The answer, of course, is the community—those persons in the community who, because they appreciate the importance of the task, and are equipped or can equip themselves for it, are what one may describe as "called" to do the necessary educational work with all members of the community, but most especially with fathers and mothers.

The education of fathers and mothers in the care of children can be done only by coöperation, because it must be done more or less individually. The Children's Bureau can and does send out its well-known group of bulletins on Prenatal, Infant, and Child Care, and send them out in enormous numbers; but the bureau cannot go into an individual home and tell the mother why milk is an indispensable food—not for children as such, but for the actual, individual children playing about the room; and this is necessary, if full results are to be obtained. One of the tendencies of human nature which we are constantly combating is the tendency of a woman to ask a neighbor, whom she knows, to advise her, even on matters of which the neighbor is as ignorant as herself. This tendency, like most others, should not be combated, but educated and trained: a neighbor who knows what to tell the woman when she comes to ask should be provided.

And this is exactly what no less an organization than the United States Government has done; the Home Demonstration Agent is that

neighbor. "Of course she goes into the community for a special purpose," a member of the Department of Agriculture recently said, "but she does a great deal more than that; you see, the women ask her everything." That is one great point—the women ask her everything; another great point is that she usually knows, or she knows where to find out, the answers to the questions they ask her. Moreover, having their confidence, and being actually, in person as well as in spirit, a neighbor, she has many opportunities to give them useful and valuable information for which it would not occur to them to ask—not knowing that they need it.

For example in the matter of prenatal care, an overwhelming number of women do not know how important it is that they put themselves under the care of a physician from the very beginning of pregnancy. And there are many husbands who do not appreciate the fact that good confinement care is absolutely essential to the well-being of their wives. We may furnish "literature" on these subjects, but it remains for the personal friend, the neighbor, to make sure that it is put to actual, practical use.

The coöperation of all organizations large and small, is needed for the solution of the great problems of child welfare, but there is perhaps no type of organization which has what children call "such a good start" as a Home Economics Association. It has been said of the home economics movement in America that it began in the kitchen. For the purposes of child welfare, it could scarcely have begun in a better place. Whatever else may be the problems of a mother, one problem she has daily, three times daily, and that is the preparation of the family meals. Whether she has servants or "does her own work," her kitchen is one of her chief and most insistent concerns. She is there—and when the home economics movement began in America, it—might one not say instinctively?—began there.

When the home economics worker, whether County Demonstration Agent, Visiting Housekeeper, or Dietitian, goes to her work, she goes into the kitchens of the community. And while she is teaching one thing, she may teach other things. A home economics expert gives an interesting account of a Home Demonstration Agent who went into a farm kitchen to help the woman of the household can tomatoes. During the course of the morning that agent also taught the woman how to pasteurize milk; and, further, not only told her that breast milk was the preferred food for babies, but told her why. "There is a great deal

of time for talking about other things when one is helping can tomatoes," the home economics expert who told this story said. The great point then is: What other things does the person who is helping know?

Home economics workers naturally see less of the fathers than the mother of the families they visit. However, the fathers hear about them from the mothers, and they too ask them, if not everything, yet some things. One home economics worker made a point of observing the physical condition of the older children on the farms she visited, and of inquiring in regard to the chores they did. She was able to do a considerable amount of educational work with their fathers in this subject.

Another home economics worker noted wherever she went the presence or absence of labor-saving devices, and the conditions governing the water supply. She found that a great many men had located wells for the use of stock close to the barn, but that it had not occurred to them that the water supply for the use of the family should be near the house. Similarly with labor-saving devices—many a man had an engine to pump the water for the barn, while his wife had no such convenience even for pumping the water for laundry purposes. Education was slow in this direction, but a beginning was made—a beginning which, it is safe to say, could not have been made so well by anyone except a home economics expert.

Education in regard to the care of infants and children in the home naturally begins with the parents and is confined largely to them. In the past, such efforts have perhaps been too largely directed towards the parents; and but little account was taken of the fact that, after babyhood is passed, one cannot take care of a child without the intelligent coöperation of that child. It is an interesting fact that the JOURNAL OF HOME ECONOMICS has, from year to year in the ten years of its existence, published an increasing number of articles relating to the training of children in regard to proper habits of eating. Home economics specialists have appreciated the fact that it is not sufficient to put before children the foods they should eat; they also must be taught to eat such foods with pleasure. How shall this be done?

Persons who have much association with children tell us that one of the essentials in the accomplishment of the education of children in any habit is not trying too hard, not, as it were, "rubbing it in." One must not depend too much upon words, especially frequently repeated

words; and one should use the words "you ought," and "it is good for you," very seldom. The little boy who, when asked what he would like to have for dinner on his birthday, replied decidedly, "I don't want anything nourishing," exhibited a reaction not only essentially childlike, but characteristically human.

Perhaps the best method, especially with young children, is simply to allow them to be present when home problems are being discussed with the mother. When a child is told to "run away and play while mother talks with the lady," he is being sent away from one of his chief educational opportunities. Rather should he be encouraged—or allowed, it usually being unnecessary to encourage a child on such an occasion—to remain while mother talks with the lady. It is amazing to discover not only the amount, but the kind of information that even small children absorb under such circumstances. A home economics expert tells a delightful story which illustrates this point. A little boy of five was brought by his mother to a lecture on food values—for the reason that she had no one at home with whom to leave him. The next evening she gave the child at supper a dish of prunes for dessert. When he had finished eating them he said to her; "Mother, may I have another hundred calories of prunes?"

Children would seem to take quite as much interest in calories as grown ups do, if not more! Mr. and Mrs. Edwin Tenney Brewster, when their book, "The Nutrition of a Household," was in preparation, made a daily practice of counting the number of calories each member of the family had received at each meal, and keeping a record of them. In a very short time, the children of the family expressed a desire to keep their "own calorie books." Moreover, they did it, and with regularity and considerable accuracy.

It can scarcely be said too frequently that while home economics begins in the kitchen and concerns itself first of all with the solving of food problems, it does not (and should not) remain in the kitchen. It goes through the house, and through the immediate surroundings of the house, and thence to the community. Among the first problems it meets are the problem of sanitation, the fly problem, the problem involved in the proper disposal of waste products, the problem of the milk supply: these and a score of others it meets. It can solve them, but not alone. No one organization can solve them alone. All organizations must coöperate. With a diversity of specialists and varying degrees of specialization, there must be one and the same spirit—

the endeavor to make, not only better, but sufficiently better, the conditions under which women give birth to children, and the conditions under which those children are reared. It is not enough to investigate and to report, nor is it enough to recommend; the results of the investigating and reporting must be used, and the recommendations must be put into effect.

No workers have a larger opportunity in this field than the experts in home economics. It is not because they are scientifically trained in the fields of household arts and domestic science that the home economics experts have such an opportunity; it is rather because they, perhaps more than any other group of trained workers, appreciate the fact that the home is not simply the house, and that child welfare is not simply keeping children well, and sending them to school, and furnishing them with opportunities for play. Needless to say, the house must be healthful, and it should be beautiful. But the reason why is the important point; it is the place in which the home, the living unit of a living state, is made. As for the children—of course they must be kept well, and they must be sent to school, and facilities for the proper use of their leisure time must be furnished. But all this is not child welfare—it is the means to child welfare, which is the rearing of happy, useful citizens.

Her report was encouraging in that many reported that the questions had stimulated them to strengthen their courses in that respect.

Two other constructive projects were launched in the Textile Section, one an effort to have textile manufacturing concerns, jobbers, and retailers coöperate in producing a few standard materials labeled accordingly. Following such action, the Section will conduct an educational drive in the Association to teach women the advantages of buying the materials. Any reader who can do anything to further the work of the committee in bringing the project to the attention of the trade will do well to communicate with Miriam Birdseye, States Relations Service, U. S. Department of Agriculture, Washington, D. C.

The other effort is in the way of improving the interior decoration and furnishings as shown on moving picture screens, first by bringing the question to the attention of managers of moving picture concerns and suggesting that they employ decorators in staging their plays; second, by asking home economics teachers to report on the furnishings shown in various pictures they may see. Blanks for such reports will be furnished for teachers of home economics or students of house furnishing classes. Address Florence E. Winchell, 176 Elm Avenue, Mt. Vernon, New York.

Dr. C. F. Langworthy gave an account of the very extensive investigations on foot in the Office of Home Economics, U. S. Department of Agriculture, that was a revelation to most of those who heard it. It included a statement of Government bulletins under preparation.

Elizabeth McCracken and Mrs. Max West of the Children's Bureau, Washington, D. C. spoke from the standpoints of home economics in general and home demonstration in particular. Mary A. Harper, Association for Improving the Condition of the Poor, New York City, reported in detail the work that is being done in nutrition classes for children. Her skillful use of charts and graphs both with the children and parents, in stimulating conscientious efforts, was very suggestive.

Dr. Benjamin R. Andrews spoke on Wednesday evening for the Thrift Education Movement. Dr. Andrews, Mrs. Norton, and Miss Elliott represent home economics work in the Savings Division of the Treasury Department. They urged teachers of home economics to devise schemes for stimulating savings in all schools, in addition to teaching thrifty housekeeping habits.

Dr. Graham Lusk, Cornell University Medical College, spoke on "Food and Reconstruction." His paper will be much used in printed

form, for it was written as a result of his investigations as a member of the Interallied Scientific Food Commission.

Dr. F. C. Butler, Director Americanization Division, U. S. Department of the Interior, gave startling figures regarding the illiteracy of native Americans, and urged greater efforts for universal education, and a democratic education in home economics.

Edna N. White, President of the Association, in her opening address on Monday evening reviewed the work of the year on the basis of the platform laid down the previous year. This served to bring before the Conference the big aims of home economics workers and to spur everybody to greater effort.

Miss White's calm poise and her constant attention to the comfort of the group gave an atmosphere of repose which is always conducive to full appreciation of a conference program. It was a great satisfaction to the Association that Miss White was willing to accept the presidency for another year.

The interest shown in all sectional meetings prompted those in charge to arrange the schedule so as to avoid overlapping as far as possible. This meant that nearly everyone was able to attend almost all meetings, but the looked for leisure vanished.

The Institution Section held one session, given over to a report of the meeting in Madison, Wisconsin.

At one of the meetings of the Extension Section Dr. Bradford Knapp, Chief of Extension work in the South, and Florence Ward, in Charge Extension Work with Women, N. and W., spoke and were also available for discussion for several days. Among other speakers on the extension program were Mrs. Jane S. McKimmon, State Home Demonstration Agent, N. C., and Mary B. McGowan, Urban Agent, Division of Extension, Commercial Club, Nashville, Tenn. The second meeting was devoted to discussion of training courses for home demonstration agents, and phases of home demonstration projects: dairy work, animal industry, poultry work, clothing, girls' clubs, service.

The work of the Textile and Science Sections has already been referred to.

The Vocational Committee meetings were very stimulating, particularly because Anna Richardson and Louise Stanley, both of the Federal Board for Vocational Education, were always available to answer questions on Smith-Hughes and Smith-Lever problems. In the Friday evening meeting, at which Isabel Ely Lord was Chairman, both Miss

Richardson and Mrs. Anna L. Burdick spoke. Mrs. Burdick, who is Special Agent for Industrial Education of Girls and Women, Federal Board for Vocational Education, made a strong plea for technical training. Her analysis of the situations with which we are all familiar, i.e., the struggling of women forced to support themselves and others with no training for it, and her masterly use of statistics made Mrs. Burdick's address illuminating to every one.

Dr. David Snedden of Teachers College could not attend the meetings as he had planned, but Miss Lord conducted the discussion of his newly issued pamphlet on Homemaking Education. Dr. Snedden's views are stimulating, and every home economics teacher will be interested to read this pamphlet, for sale by the Bureau of Publications, Teachers College.

Jenny Snow, Supervisor of Home Economics, Chicago Public Schools, conducted a round table discussion as temporary chairman of the Committee on Reorganization of Secondary School Courses in Home Economics. Although nothing definite was formulated as a result of the meeting, the Committee had the benefit of the expressions of opinion and educational practice in all parts of the country. It was gratifying that in many respects there was very general agreement in (1) working toward food and clothing problems as nearly under home conditions as possible; (2) avoiding exploiting of children in lunch room practice; (3) breadth of view in general education rather than over-emphasis on technical skill.

The wide range of interests considered by the committee who arranged the program is apparent. In this connection it should be noted that Agnes Ellen Harris took over the task of program arrangements at a very late date, due to the illness of the original chairman. The Association was deeply grateful for the wise selection of subjects and the strong speakers.

The annual meeting of the American Home Economics Association is gaining in popularity. It is unfortunate that more cannot attend. Although the meetings prove of great value, the informal discussions of specific problems are even more helpful. Groups of three or four or a dozen spring up on the spur of the moment or as a result of unfinished discussions at meetings. Although one of the charms of the conference is that it is small enough to be personal, still those who attend are eager to see the benefits shared and urge all to make especial effort to attend next June.

FLORENCE E. WINCHELL,

The Lincoln School of Teachers College, New York City.

COMMENT AND DISCUSSION

Obdurate Educators. In the fall of 1907 the meeting of the Association of Collegiate Alumnae was held in Boston. During its session a woman, prominent in its councils, delivered an address in which she tried by ridicule to dispose of the more modern and practical branches of study. Probably her audience as a whole either agreed or received the address as a characteristic expression; one hearer, however, not only was not convinced but felt a certain obligation to break a lance with the speaker and sent the following letter:

March 3, 1908.

My dear Miss——:

For many reasons I was keenly interested in your address at the A. C. A. Meeting last November. There were certain points, however, on which I would like more information. I have waited for the printed proceedings that I might not trouble so busy a woman unless there were sufficient ground to warrant it; and perhaps you will not agree with me in thinking my inquiries justified.

You said, "It is also true that sanitary and domestic science are not among the great disciplinary race studies." That is true, of course, for the past, since they are comparatively new. But for the future, why do you consider them lacking in disciplinary value? Is it from the nature of the study, or from the state of its development?

The latter, as a reason, certainly has weight, for much of the earlier work has been elementary in character. But at the present time women—and men—of advanced scholarship are working in the development of courses whose content and method shall be scientifically worthy.

As for specialized education for sex, there is no sex in sanitation, none in the fundamentals of hygiene and food study. They are human studies, and are to be a part of the future man's education as well as of the woman's; not for the reason that the livelihood may be earned more easily, but as a necessary ground for the development of a sound body and sound mind.

We are done with the idea that the scholar must be consumptive and the religious man a recluse. But was not that only the earlier, cruder form of this fear of the so-called practical? What is there that makes theoretical science so pure, and applied science so unworthy? In our college physics we study the laws of heat and light. All our natural lives we must live in daily obedience to these laws, or suffer from bodily disability because we have broken them. Why are our minds less disciplined as we study our physics, by applying the laws to windows, stoves, and the general problems of our common life? This is not a rhetorical question. I would like to know why you say that it is so.

I do not believe that such studies should be a compulsory part of a college course, at least at present, but that they should be offered as electives. They may be allied with the work in physics, chemistry, biology, and economics; and I believe that proper courses, under proper instructors, will have as much disciplinary value as any other proper course. Is there any more ground for believing to the contrary than there was for believing that woman's education was doomed to remain academic?

I am not a teacher and have no experience as an educator, but because when I heard your address I thought you were wrong I want to be corrected if I, rather than you, should change my opinion. It seems to me that I could go through your address and show the analogy between your attitude toward the "practical" studies, and that of President E—— and others toward woman's higher education in the past.

This is all very presumptuous from a mere business woman to a college president, but I really want to know if you are following the work in these branches.

It is a good many years since I left college walls, but if I am right, much of the cultural and disciplinary in our education comes from the Greeks, whose ideal of bodily development was beyond ours in some respects. Is it not tenable that greater attention on our part to the subjects that will give physical betterment may bring in happier results than you fear?

The letter was honest in intent and the reader shall decide as to its courtesy. In spite of the enclosed stamp for reply, none ever came nor was the original letter returned by the post office.

Now in this year 1919 comes a newspaper report of a commencement address from the same source. The quotation following was taken from the *Boston Transcript*.

The women of my generation and earlier generations (I might almost say from the time of Eve until the opening of Bryn Mawr and other women's colleges) have tried this practical applied education for centuries and we know of what we speak. It was only when we too were allowed to share in the kind of idealistic education that has nurtured the spirit of man from the time he first appeared as a thinking human being upon the earth that our woman's world of petty duties and interests became transformed into a new world of the spirit, for the first time inspired by these great devotions to abstract learning and abstract causes that have made our human race what it is.

So-called practical studies, science applied to daily problems, the chemistry of cooking, or furnaces, physics as applied to reading lamps, the arithmetic of the market and the bank account lose in some curious way the inspiration

and glory of theoretical studies. The soul and spirit have gone out of them. Teachers of such applied studies become in some strange way like the business men and women we have all known. They, too, lose the radiant halo that in spite of their many human imperfections glorifies the head of a true teacher of the humanities. Both teachers and pupils become bleak, every-day kind of persons. There is now, however, an almost irresistible trend toward such bleak vocational studies and such bleak teachers.

We will not enter into the personalities of this discussion, as to the relative bleakness of character exhibited by the materialistic professor of home economics, for instance, compared with some austere spirits we have known whose lives had been given to the "humanities."

We will also pass lightly over the condensed history of education that estimates as idealistic man's first thinking; that compares the formulated courses of universities for men in the nineteenth century with the traditional home crafts of women; that denies to all women of the past entrance into the world of the spirit. College presidents are tired at Commencement time; but a tired college president should not condemn thousands so easily to poor "bleak" lives even for the passing moment of her pronouncement.

It may be that there is something more primitive and unreasoned than the excluder thinks in this antipathy for the "daily problems," the "practical;" something allied to caste and the elaborate ceremonials of early peoples. On any other basis it is hard to understand the sharp discriminations as to the relative purity of subject matter. Why worship Greek culture with its perfection reflected in art and transmuted into the classics, and neglect today the studies that tend to give us and the next generations bodies more capable of such development and such thought? Why is it so educative and refining to study the ways of faithful Penelope and neglect the knowledge that leads our women to look well to the ways of their households? Why but because of this great gulf that set art apart from practical women have homes been ugly shelters filled with horrors for the aesthetic? Why should a thinker meditate raptly on God in some of his marvellous creations, and deny him in the making of bread, or in numberless household processes revealing perfect law, or in the continued creation of life?

This assumption, unconscious or expressed, that the present time and the near experience lack inspirational content is almost an unpardonable sin. It condemns its follower to restricted paths, when the whole world might be his. It is at the root of class distinction. The educated

NEWS FROM THE FIELD

The National Research Council has appointed a Committee on Food and Nutrition, constituted as follows: John R. Murlin, Graham Lusk, Lafayette B. Mendel, C. F. Langworthy, H. C. Sherman, Alonzo E. Taylor, E. V. McCollum, Isabel Bevier. Henry P. Armsby, A. F. Woods, E. B. Forbes, W. H. Jordan, Raymond A. Pearson. Of this general committee, the first eight are to constitute a Sub-committee on Human Nutrition, with J. R. Murlin, Chairman, and the last three a Sub-committee on Animal Nutrition, with H. B. Armsby, Chairman.

The Committee held an organization meeting at Cornell University Medical College, New York City, on July eleventh, and adopted the following tentative program:

The Committee regards itself substantially a coordinating rather than a research body.

Its objects are: (1) To promote scientific research upon the nutrition of men and of animals (especially animals of agricultural importance) and to bring about closer relations between the two fields of work. (2) To promote study of the economic aspects of nutrition, i.e., study of national and international as distinguished from personal nutrition. (3) Pending the possible establishment of a National Institute of Nutrition, to act as an unofficial clearing house for existing research institutions and to promote coordination of both American and foreign research. (4) To promote sane and authoritative extension and propaganda work in the interest of better nutrition.

In considering methods, it must be borne in mind that the Committee has only moral and not mandatory authority. It suggests:

- (1) *a.* Preparation of a broad program of research in both human and animal nutrition, emphasizing especially gaps in present knowledge with suggestion of problems of more immediate im-

portance. *b.* Maintenance of research fellowships. *c.* Subsidizing of especially important researches.

- (2) The cooperation of statistical agencies would appear necessary.
- (3) *a.* Meetings of the Committee and of nutrition investigators in general, especially for the sake of maintaining personal touch and considering programs of research. *b.* Correspondence and publications. *c.* Representation of the United States in the International Scientific Commission of Nutrition.
- (4) *a.* Cooperation with existing governmental agencies and educational institutions, especially of the land grant colleges. *b.* Cooperation with the American Public Health Association.

Among the questions affecting public welfare which require immediate investigation, the Committee considered the following the most important: *a.* Practicable changes in methods of food production for the purpose of reducing the cost of living without reducing the quality of nutrition. *b.* Diet in relation to industrial efficiency. *c.* The food requirements of growing children.

It was estimated that thirteen fellows of the National Research Council could profitably be put to work at once upon these problems and various possible sources of funds were discussed.

Information has been received from Dr. Alonzo E. Taylor, who is still in Paris, that "The Inter-Allied Scientific Food Commission closed its existence at Brussels on May 25 with recommendations to the governments involved to form an Institute for the Study of Nutrition, to be connected with and a part of the League of Nations in precisely the same relation as the Red Cross will stand to the League with reference to sanitation."

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HOW TO MAKE HOME ECONOMICS WORK FUNCTION¹

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In considering the topic "How to Make Home Economics Work Function" we should ask ourselves these questions: First, what is the place of home economics in the education and development of the child, what is its purpose, of what value should it be? Second, is it fulfilling its purpose, are these values being realized or are the results disappointing? Third, if they are not satisfactory, what are the reasons; where are the weak points and what suggestions can we offer for making the work function as it should?

Should not the purpose of home economics work be two-fold? Should it not aim to make more intelligent homemakers and better women citizens, thus being of direct help to young women in their own life experiences, and at the same time should it not vitalize their education, and train their minds and intellects?

Our home economics work should prove these values. It should make more truly capable and intelligent women, women who are sympathetically awake to the difficulties of others and to problems of social welfare, women who are ready and able to take up and bear their share of the duties of life. If it is functioning *educationally* it should help to shape their attitude of mind, their habits of thinking, their powers of reasoning, their standards of appreciation, their bases of choice. It should be of value in controlling their conduct.

¹ Given at the Inland Empire Teachers Association, Spokane, Washington, April 3, 1919, and at the Oregon Home Economics Association Meeting, Portland, Oregon, May 17, 1919.

With these aims and purposes in mind can we conscientiously claim that home economics work the country over is functioning as it should? Do the young women as they go out from our schools carry into their lives, or into the communities in which they are working, the principles of scientific management taught them in school? Do they work more efficiently? Do they choose foods wisely for themselves and for others? Are they able to select and prepare food properly for sick people as well as for those in health? Do they have a skill and knowledge which will enable them wisely to feed children, or a large number of working men; to serve a dainty artistic luncheon to a few friends, or to manage a big dinner for a large group of people? In every case do they consider cost and amount of work? Are they able with a small amount of money to furnish a home which is simple, dignified, restful, comfortable, and yet aesthetic? Can they manage that home at moderate cost? Have they not only developed the ability to sew and construct; but have they a knowledge which will make them wise choosers? Do they possess a knowledge of materials, their proper value and use? Do they dress appropriately, becomingly, artistically? Do they understand the hygiene of clothing, its importance as a factor in maintaining health, and do they know how to take the proper care of clothing? Do they know the value of money and the need of reasonable economy in spending it; can they interpret a dollar in terms of work? Have they a larger comprehension of what money means, and better habits in regard to spending it so that the results of the outlay may give more satisfaction than they have given in the past?

Have they developed a feeling for good line, good form, good proportions, good colors and combinations so that they will desire those things in their own clothes, in their homes, in their everyday surroundings? Have they developed an appreciation, an understanding of the work of the masses, a sympathy for the worker, a respect for honest labor, a spirit of social usefulness which will make itself felt in any community in which they are placed? Do they as consumers and shoppers realize their ethical obligations with reference to the life and occupations of workers?

I think that we shall have to acknowledge that this training which the schools are attempting to give does not function in the students' lives nor in the communities which they represent as we feel that it should; the work of the school does not have the vital relationship with the immediate world in which the child lives that it ought to have.

Many of the children do not develop the skill and technique which we should like to see developed, and fewer yet realize or attain the educational value which is embodied in the work.

Why? We should be asking ourselves the question—Why?

A few possible reasons, a few suggestions, I wish to present for discussion. While developing technique, knowledge of processes, skill in manipulation, have we emphasized the educational values as much as we might, as much as we *should* have? Do we in the grades, high school, or even in our higher institutions of learning, make adequate provisions for the elements of thought content and appreciation? In all home economics subjects there is, we realize, a rich body of knowledge and material for appreciation of values and worths which we call liberal education or culture, but, partly because of the recent demand for a higher degree of skill and technical efficiency in the industrial worker and partly because motor development has been made an end point, relatively small provision has been made for these elements of thought content and appreciation. They have been largely by-products. The vocational motive has dominated the work.

For instance, in the sewing classes in our schools today are we giving proper emphasis to the textile side of the work? Do the children learn the extent of the textile industries, their history, their commercial and industrial geography, their relation to fine arts? Do they know anything of the lives of the workers in the industries and of their further social relationships to the children of the school itself? Is their judgment trained to estimate values in materials, to appreciate the art element in all textile products? Are they more intelligent choosers, wiser buyers? In the food work do the children realize the conditions under which the preparation and manufacture of different foods are accomplished; the scientific elements involved in these processes? Are they made to realize the importance of hygienic consideration of both foods and clothing? Do they sense the vast significance of the great army of workers engaged in the preparation and manufacture, distribution and storage of all our food products, and have they developed an appreciation of the meaning of these industries to the individual workers?

It is out of such work that our young people will develop larger interests in present world peoples and their activities; therefore I would offer as one suggestion for the better functioning of home economics educationally, that more emphasis be placed upon the rich body of thought content and knowledge contained in our home economics work.

The field offers material for study within the range of capacity and within the appreciation of every grade in the elementary school.

We must realize that the utilitarian value is not the only object of home economics training, that those interested in promoting education today are trying to make the school room work as much as possible a training to prepare the pupils for actual life conditions; so while the construction of garments, and the preparation of food is an important part of the work, other phases of cultural and educational value should be introduced and carried with it, the subject matter being adapted to the age, the needs, the development, and the knowledge of the children.

We often hear this statement, "I cannot give very much of that work. The students are not interested in it, they do not enjoy it. The work in our school is elective and if I require much of that work the students will not elect it." This brings me to another point which I wish to open for discussion, namely, our methods of teaching. Have our modern methods in education been taken over and used in the teaching of home economics subjects as they have been in other lines of work? Are our home economics teachers as alert in trying out new methods, in keeping up with the yearly advance in methods of teaching? When the socialized recitation work came in as an effective, modern educational method it was at first thought possible only for certain courses, such as history or English. Gradually teachers realized its value and today it is being successfully used in most of our grade and high school subjects. Teachers of home economics were slow in adopting it, but finally our more progressive ones, aiming to meet the awakening interests of pupils and interested in the mental development of the children, began to use it in their class and laboratory work. Those teachers today recognize its value in training the mind, in arousing the social conscience and in awakening the sense of responsibility.

The "Problem-solving" method of instruction followed. Educators today claim that class-room work and laboratory exercises if most effectively taught, should grow out of problems. These problems are chosen to make a personal appeal, to be of interest to the pupils and to be typical of problems which confront people in everyday life. In the solving of these problems, reflective, purposive thinking and reasoning on the part of the students are called for. The teacher's duty in assisting and stimulating pupils in problem solving is to define the problem carefully and keep it clearly before the pupils, to assist them in analyzing the problem, in recalling as many related ideas as possible;

to aid them in correlating facts and principles gained from their previous knowledge that may bear upon the present question; to lead them to criticise the suggestions recalled; to eliminate those which have no bearing on the problem, to select those which do; to organize the material as it is given, using outlines, tabulations, graphic representations, and other methods. Do you see the educational value in such a method of teaching if well done? Educators have found this reflective, purposive thinking and the development of this type of mental activity extremely important. They realize that conditions of life both for society as a whole and for individuals are continually changing and the ability to deal with new problems and new situations should be developed early.

Again home economics teachers adopted this method slowly, but those who are using it today realize that much of their work in the grades and high school may be based on typical problems of every day life, for example: "What foods will give me the best investment for my money?" furnishes a problem on which may be based a lesson on comparative economic values. "What foods are best suited to different members of my family?" should prepare a class for a lesson on dietetics. "What food materials are necessary in order to keep my body strong and to help it to grow?" will give one opportunity for a lesson on food principles. "Why I should pay more for linen than cotton," would lead naturally to a lesson on costs of materials. "In what ways do clothes affect my character?" will interest a class in a discussion of the ethics of dress. "How can I keep my clothes looking attractive?" "What furnishings do I need for my bedroom in order to have it attractive, convenient, and sanitary?" and "How can I best distribute a certain income for food, clothing, shelter, recreation?" would furnish problems for lessons on care of clothing, house decoration, and house administration.

Most of our home economics work can easily grow out of problems which will be of real interest to the pupils and at the same time will be typical of those that confront people in every day life. Our methods of teaching, then, should be up-to-date. Our home economics teachers should be educated women, women with a good science and art background, with good technical knowledge and good pedagogical training and ability, women who are examples of what they teach, who exemplify in their own lives the underlying principles of home economics; who carry into their dress, into the management of their work and lives and into their civic and social interests the doctrines they teach.

Another means of making our home economics work function in the lives and homes of our girls is by creating less artificial conditions for the work. A few of our more progressive schools are already realizing that the small quantity cookery must be eliminated, that our equipment must more nearly approximate home equipment, our laboratories be more nearly like our home kitchens. Food principles and processes must be taught by placing the food work on a meal basis, that basis being determined by the teacher's knowledge of the home conditions and of the financial status of the families in that community, so that attractive and wholesome meals are planned which come within the means of any group.

Another reason why our home economics work is not functioning better is because not enough time in school can be given to the work for the students to have sufficient practice to develop the skill in technique and the speed which is necessary for efficient work. Very little skill in bread-making is developed from one or two bread lessons. Very little skill in dressmaking is acquired from the making of *one* garment of a type. It takes practice to make perfect. The "home project" work as a solution to this problem has been agitated for years. It is being used in many schools with varying degrees of success and in many others it has been tried and rejected. The home project work is difficult to manage, there are serious difficulties connected with it, such as the problem of properly supervising it, the opportunity for dishonest reports; but it seems to be the only solution to this problem of giving the students more practice in applying the processes and principles developed in class room work. It deserves more study and thought and time on the part of teachers and administrators.

Another criticism that we often hear of the home economics work is that the students are able to secure successful results in the food laboratory or to make an attractive garment in the sewing laboratory but that they seem unable to do it outside of school. This is partly due to the fact that they have not practice enough under supervision to develop initiative, independence, confidence, and skill in doing, and partly to the fact that the instruction has been largely the giving of individual help rather than the logical development of the processes and principles which underlie any particular phase of the work.

For instance, when a class finishes a course in undergarment making should they not have mastered the processes of undergarment making and be able not only to duplicate the particular garment on which they may have made application of certain processes but be able to make

any type of undergarment? General class presentations should be made, then, of every process and principle and the whole class should be held responsible for them.

One other question we should be asking ourselves is this: "Do students who are especially poor in some particular phase of the work, who have very little knowledge of it and practically no skill in doing it, get more or less training in that work than the students who already possess more ability and greater knowledge of that particular phase of the work?" For instance: In meal service, if guests are invited, is it not the tendency often on the part of the teacher to have the person who is most capable in serving do that work, to have the food prepared by those who the teacher knows will make a success of it in order that the meal may go off well, while the students who *need* that training the most are kept at work on some phase of the work that they already know? To take an example from clothing, do the students who know the *least* about fitting, who are especially poor in it, get the opportunity to do extra work in fitting or are the students who have more skill along that line called upon whenever the occasion for more work arises? Or do we still have teachers who do the most of the fitting themselves, because it saves time and the results are better and the students prefer it, the students going out from those classes with little more knowledge of fitting than when they entered?

Are we adapting our work to the needs of our students, to their age, their ability, their knowledge? Are we adapting it to meet changing conditions—economic, social, intellectual? If so then we cannot be giving the same course year after year though that may be the easy thing to do. For instance, with the textile situation changed as it was by war conditions what changes did that make last year in your work in textiles and clothing? Did not every conscientious home economics teacher, in order that her clothing work might function, give added emphasis to the economics of dress? Did she not feel the importance of discussing the planning of economical wardrobes, economy in buying, means of making clothes last longer, the uses of old clothes; and did she not in her laboratory work stress repair and remodeling?

It is only by adapting our work and meeting changes of this kind that we can hope to establish that vital relationship between it and the immediate world in which the child lives, that we can hope to have this work function as it should in the every day life of the students and in the communities of which they are a part.

A COURSE FOR HOME DEMONSTRATION AGENTS; THE ILLINOIS PLAN¹

MAMIE BUNCH

State Leader of Illinois

With the development of the Home Demonstration Service in Illinois it became apparent that the experience gained from our pioneering should be made available as a guide and time saver to beginners in the extension field.

We have found that certain terms need definition, that certain matters of administration may be learned before hand rather than forced upon one through experience, that certain sociological and economic conditions are common to many fields; that certain pedagogical and psychological principles are common to both class and extension instruction though the method of application is altogether different in class room and field work. These matters may all be made available to candidates for extension service, through class instruction.

The machine through which the home demonstration agent functions has been sufficiently developed so that candidates may become familiar with it through class work. The relation of the Home Bureau, her special part of the machine, to the entire States Relations Service mechanism should be learned by the agent before she goes into the field. It is equally necessary for her to learn her relation to the Home Bureau and she should become familiar with its organization and operations.

Since the Home Bureau in Illinois is somewhat different in organization and management from that of other states, it may be well to mention certain points. We feel that the Home Bureau affords an excellent opportunity for our women to acquire some knowledge of the business of citizenship; accordingly the management of the Home Bureau is placed in the hands of the women who compose its membership. The Home Bureau of each county is incorporated under the state law; the women pay a membership fee; the treasurer is bonded, and the business of the bureau is conducted according to the constitution and by-laws suggested by our organizer and adopted by each bureau, with such local modifications as may be necessary. The president is selected with the idea of securing not only a good presiding officer but a woman who can win the coöperation of other organizations. The vice-president, in

¹ Presented at the meeting of the Extension Section, Twelfth Annual Meeting of the American Home Economics Association, Blue Ridge, N. C., June, 1919.

addition to the usual duties of the office, has charge of the social affairs and is selected accordingly. The secretary has charge of the publicity; so journalistic ability is considered the basis of choice for this office. The treasurer is preferably a business woman.

The work of the bureau is outlined under five main heads; food, clothing, health and sanitation, household management, and neighborhood interests, with a county chairman for each, and a sub-chairman in each township. We have, at present, seventeen home bureaus so organized, with a membership of 11,000 representative, rural women.

Within the limits set by the state program as presented by the organizer the bureau decides what it wishes to do and where it wishes to place special emphasis; that is, theoretically it does, for often a county is so content, that except in the case of a few leaders there is no feeling of need of anything beyond what it has been used to, and the agent or the organizer has to waken a community to a recognition of a need for improvement. However, the local bureau decides finally what is to be done. The bureau selects its own adviser or agent for a term of three years from a group of candidates recommended by the Extension Appointments Committee at the University. This committee consists of the vice-directors of the Extension Service, the senior members of the house staff in foods, in textiles, and in administration.

The committee requires some definite qualifications for county agents in Illinois. Chief among these are a degree with major in home economics from a four year course in a university or recognized technical college, a pleasing personality, ability to work with people, and a knowledge of life and maturity of judgment indicated by at least five years' experience in teaching or in lecturing and demonstrating or in actual farm life. Preference is given, other things being equal, to candidates brought up on a farm. Candidates likely to meet these requirements are invited to attend our summer school.

We regard the extension field as being of vital importance to the whole home economics movement, for through it we not only find problems for laboratory solution but prove the service of the laboratory contributions toward simplifying methods, and developing better standards of home life; therefore the greatest care is used in the selection of our field workers.

Many candidates for extension work are moved by a genuine impulse to serve but have a very superficial conception of either the requirements of the field or their own particular fitness for the type of work

necessary. Others are merely in search of a job, but it is evident that only applicants who have an appreciation of the importance of the work and the qualifications required for success in it will meet the approval of this committee.

When girls from our own college show an aptitude for extension service we advise them in selecting their elective courses to have journalism, rural sociology, public speaking, and physical training in mind as particular assets.

The first essential for successful extension service is the recognition of the ultimate aim of extension work. Miss Bane, our organizer, at a recent Home Bureau conference defined this aim as follows: To develop every home into an institution which is economically sound, mechanically convenient, physically healthful, morally wholesome, mentally stimulating, spiritually inspiring, socially responsible, a center of unselfish love.

To attain this aim the housewife must realize that housekeeping is a means to an end—a means to secure a finer development of individual life and more wholesome contribution to community welfare.

It is the task of the home demonstration agent to bring to her field the contributions our college classes and laboratories have found to be of genuine worth from science, art, system, and invention, to aid in this development of home life.

The Home Bureau needs direction in determining what is most worth while, and in so using the contributions of home economics in the solution of its problems as to make the simple necessary tasks so interesting in the performance that housekeeping becomes a joy rather than a drudgery, and that homemaking becomes a patriotic service of the highest order.

The second essential is the view point. You may recall the story of the three artists who, strolling through the countryside together, on reaching the brow of a hill, exclaimed in unison at the beauty of a bit of landscape before them. One said, "Let us each sketch it and compare our sketches." They did so. The result was three totally different pictures. One was delighted with a particularly symmetrical tree in the near foreground. In his sketch, the tree was drawn with great fidelity, and the meadows, hills, and clouds subordinated to the splendid tree. One saw particularly the wonderful play of light and shadow on the meadows, and that was the outstanding feature of his sketch. The other was impressed by the breadth of the vista, the broad open spaces

and the wonderful gradient of tones defining the ranges of hills in the distance. In his picture, each detail was depicted in due relation to the whole scene. The tree was there but as an incident. The light and shadow were caught also but only as they emphasized the larger view.

So with equal scholastic preparation, each home demonstration agent will interpret the needs of her particular field in the light of her own experience, aptitude, and sensitive reaction; therefore the high lights in the vision as it unfolds to the individual consciousness of each prospective agent need comparison as to value, and the medium through which results are to be obtained must be studied. A study of the relative values of local problems in their relation to the whole scheme is also essential. Some of these typical conditions will come up for analysis in our school. For instance, in one rich county where the child welfare work had discovered, through its weighing and measuring, an astonishing number of subnormal children, the Home Bureau selected an adviser who had had special training in nutrition. The problem of bringing these children up to normal through proper diet, furnished her first point of contact with her county, and within a short time she was directing dietaries in fifty families who reported to her each week. She thus got her contact with her people by demonstrating the value of diet in disease, and so secured an interest in our chief food project, the planning of meals for normal diet, where the emphasis is placed upon wisdom in selection and simplicity in the preparation and service of food, the basis for all our food demonstrations, other than in food conservation projects.

A recognition of the fact that each community has in it all the ability necessary to its own development, lies back of every item of extension policy in Illinois. It is not our task to do any community's work for it, but to help discover its needs and to show the ways by which the community may meet those needs.

Many good teachers and demonstrators are poor executives. They find it easier to do than to get others to do. This is often due to lack of systematic mechanical plans for a distribution of effort. The Home Bureau usually has among its members representatives from all the woman's organizations in the community. The home demonstration agent must discover the contribution each group represented can make to the general project of home improvement she has in hand. Examples from the field indicate methods used in obtaining coöperation of such a nature as to distribute effort and responsibility. Practical plans for

executive details have been developed to a considerable extent and will be presented in class work for the benefit of candidates, for a successful home demonstration agent must be a good executive.

An agent may present an excellent lecture or demonstration, but may not know how to follow up her instruction and discover how it is being utilized in the homes of her patrons; but, since the Home Bureau is valuable to a member just in proportion to the effort she makes to apply its teaching to her daily tasks, one of the first things an agent must acquire is the ability to get her patrons to practice her teaching and report the results. As an aid to this end a definite plan or project which the members have had a part in making has been found most helpful. The technical details of forming these working plans may be acquired. The necessary points must be discovered and the effort distributed in such a way as to interest the greatest number. It requires practice to state clearly and simply a practical plan of work in project form. An agent should acquire some facility in writing practical projects before she goes into the field to write one with her bureau. This we take up in our training classes.

Women who come to the extension field from teaching are not as a rule particularly clever in organizing their offices. In entering a new field they do not know just how to file bits of information which may be necessary for later use. They need convenient record forms. Experience in the field has shown that much time and energy may be saved, and much effort more wisely directed by teaching agents these phases of office organization before sending them into a county.

The bibliography of the extension field and publicity methods may likewise be taught and become a part of the prospective agent's professional capital.

The women of the Home Bureau are not much accustomed to business or the necessary equipment for carrying on the business of an office; therefore a knowledge of necessary office equipment and the items of a probable budget of annual expenditures for the office form another essential bit of the agent's capital stock.

The technique of demonstration teaching must be acquired. Commercial firms have been quick to realize the spectacular advertising value of the demonstration method. Many of the commercial demonstrators are clever, alert, attractive business women who have become very skilful in presenting their particular subjects. They achieve good looking results and talk glibly if not always accurately while they work.

The average woman does not discriminate between the entertaining advertiser and the instructor. Our demonstration agent with at least five lines of demonstrations must compete with these commercial demonstrators who have become adept manipulators in one line; so it is essential that all our agents acquire a fine technique. They must show not only an attractive finished product, they must determine also what demonstrations best set forth the principles they wish to establish. The technique of demonstration teaching therefore is made prominent in lecture, discussion, laboratory, and actual field work with rural units of the Champaign County Home Bureau before whom demonstrations in food, clothing, home nursing, and household equipment are made with plans for securing results in the homes represented.

Our work in Illinois is developing slowly but we think it on a safe permanent basis. As soon as we find what seems wise to recommend we confer with our bureaus and their agents concerning it. Members of the executive boards of the Home Bureau are always invited to our home demonstration conferences and we find their presence and interest of great value to the work of their respective counties.

Having considered the various items cited in this paper, we are presenting to candidates for extension service, in our six weeks summer course, studies in rural life as it is; the relation of rural wealth and income to improvement; the relation of agricultural agencies to rural problems; the organization of the extension movement (legal basis, financial policy, relation to other agencies); existing organizations in Illinois, their nature and scope; needs of the rural community, educational, religious, sanitary, social; organization of Home Bureau work in a county; the pedagogy of extension teaching; methods of extension teaching; office organization and management, records, bibliography, illustrative material, publicity, reports; project, (writing, developing, and reporting projects); the technique of demonstration with actual field work under staff specialists.

If funds and properly equipped agents can be found, we will establish other Home Bureaus as fast as the sentiment of a county crystallizes into an organization of housewives willing not only to support the work financially but to receive and apply in their homes the instruction given.

We have learned how timely now is the instruction of Paul to the Galatians. "Let every man prove his own work, then shall he have rejoicing in himself alone and not in another. Let him that is taught in the word communicate unto him that teacheth in all good things."

RECONSTRUCTION IN RELATION TO HOME ECONOMICS

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Why is there so insistent a call at this juncture for the reconstruction of the national life and in what ways does this call affect home economics?

In the first place, the disintegrating forces associated with a great war have been active in four continents for as many years. Among the chief of these may be mentioned the premature death of millions of vigorous young men, a reduced birthrate, and, in many places, an increased rate of child mortality. Much sorrow and suffering have vastly diminished the nervous energy of adults; grievous famines and plagues still further undermine human vitality, while multiple minor dislocations are associated with the resultant shortage of food, fuel, clothing, and recreation. An exhausted world calls for reinvigoration, in which process judicious reconstruction must play an important part.

In the second place, the magnificent patriotism which expressed itself during these years as the "will to die" for the world's well being must now assume another, but equally praiseworthy form, namely, so to live that the finest type of humanity may be the result. Believing as we do that the object of home economics is the right care and conduct of human life in the home, this dual appeal comes to us with intense urgency. It is our privilege and our responsibility to respond to this demand, to safeguard human life at its source and to maintain it throughout its existence at the highest level of efficiency.

I propose, therefore, to discuss my subject very briefly from two points of view: (1) the reconstruction which springs from a recognition of weak points in the original structure; (2) the reconstruction necessitated by a call for expansion, in order to accommodate increased demands on space. The first form, namely, a recognition of weak points and the determination to reinforce them, calls for considerable courage, much tact, and a delicate sense of relative values. It is not alone that various crumbling precepts menace the foundations of our subject matter, but the erection of far stronger supporting buttresses of practice are essential to the endurance of the fabric. Can we truthfully maintain, for instance, that the exponents of home economics exemplify consistently in their lives the application of the principles they inculcate? For example, can students be expected to display profound conviction of really

vital truths when the teachers of right living feel no shame, but rather glory, in the consumption of hasty, ill-planned meals, in the curtailment of necessary sleep, in the maintenance of home or office at temperatures known to be detrimental to human efficiency, in the subservience to fashions described as conducive to "increased sexual crime?" Courage to revise social conventions, when shown to be detrimental, to reform age-old habits where proved devitalizing, is essential to reinforce the weak joints in the harness of humanity, to which home economics practice should be one of the contributory factors.

It is with the object of encouraging such consistency of practice that from now onwards a gold medal will be conferred annually at the Utah Agricultural College on that member of the graduating class in home economics who gives evidence of the most sustained and intelligent application in her daily life of the principles, to the study of which she has devoted four years. The award of this "Lois Hayball medal" will be made by a committee which includes representatives of the student body as well as of the School of Home Economics and the college physician. It is an example which may be fitly followed by all colleges, for by this means the scope and methods of the home economics course would be subjected to valuable scrutiny and recurrent criticism. To quote Hugo Münsterberg's dictum that "every science must reach a certain stage of maturity before the process of application is in place" cannot, at this era constitute an excuse for the builders of home economics. Now is the moment when there must be adequate evidence of that profound faith in the truth of the theory professed which results in the expression thereof in every phase of daily existence.

A too conservative respect for pioneer workers is apt to exist among those by whom this work of reconstruction should be undertaken, a respect which hesitates to discard material to which undue value was assigned under the glamour of early enthusiasms. Energy, too, is often lacking to substitute sound scientific facts for widespread popular fallacies; thus the task is neglected, because it is uncongenial and distasteful.

If faith is founded on facts it should show itself by its works. The leakages of health, money, time, energy, which still characterize students of home economics equally with their fellows must be stopped. Leakages such as careless diet, bad taste and unwise choice in dress, extravagance in details of expenditure, lack of regular exercise, faith in patent preparations of unknown drugs rather than in the cultivation of

the body's innate capacity for resistance; all threaten the stability of a structure primarily designed for the advancement of health and the right regulation of daily life in the home.

That the destructive tendencies of modern existence must be controlled and neutralized by the constructive intelligence of trained homemakers is an accepted platitude. It is the will to do, the exertion of necessary effort, which are wanting.

The second aspect of reconstruction, that of expansion, calls for no less urgent emphasis in the field of home economics. All unconsciously the tendency has been to restrict rather than to expand its scope; to limit its subject matter to the three groups of domestic needs (food, clothing, and shelter) rather than to enlarge its borders to embrace every aspect of human life exhibited in the home. The relation of each home and its occupants to the community, nation, and world at large, needs constant emphasis if young people are to perceive how far-reaching and enduring in its effects is each humble, domestic duty. In a country where a premium is placed on individuality and where each home is considered the concern solely of its owner, this communal responsibility calls for very forcible inculcation.

Reconstruction has been defined as the rebuilding of the life of humanity. Popular sentiment accepts the home as the cradle of human life and yet sees no contradiction of terms when statistics demonstrate the annual loss in this "cradle" of at least 300,000 babies within a few months of their birth. There is no evidence of public or domestic shame when the facts are made known that the homes of this country are responsible for about fifteen million physically defective children of school age, and for the fact that thirty per cent of the young men of an age for military service were incapable of response to the call. It is in these "homes" also that tens of thousands of young children die each year from entirely preventable causes; it is from them that a steady stream of recruits is contributed to the army of criminals and insane. What a reflection on the teachers and students of home economics! For it is the parents of the population who are responsible for the serious diminution of national vitality, for the menace of so many low-powered lives, for the existence of so many incompetent citizens.

The whole conception of home economics must be expanded from that of the study of cooking, sewing, and cleaning, important as this is, into a realization of its actual scope—the right care and conduct of human life in the home. Its details of essential application must be

set in a broad frame of human needs; the rights of democracy must be more closely and continuously linked with its equally weighty responsibilities.

All credit is due to the pioneers who laid the foundations of our subject; our debt to them is heavy and can only be discharged if, in our turn, we extend the original framework to include the mass of material which has been collected since they passed their work on to our hands. I venture to think their vision would have been keen to detect the shifting of values, as fuller light floods the twilight in which they labored. Their convictions would have spurred them to the effort called for if the results of modern science are to be dovetailed effectively into the original structure, so that it may be perfect and entire in its adaptations to human requirements.

Benjamin Kidd tells us that the process of human evolution has passed through the individual to the social stage; an era which calls for the gradual perfecting of humanity by fostering every quality contributory to collective efficiency in all human institutions. Since the civilized home is the highest product of civilization, the sole test for the efficiency of our home economics methods must ever be the quality of human material produced in these homes. The application of this test in the present year will surely prove the most conclusive argument for judicious reconstruction and suitable expansion in our home economics methods if we, its exponents, are to respond to the world's appeal for reinvigoration.

United States Commissioner of Labor Statistics states that results of investigation of relation of cost of living to public health show that "from all the evidence at hand it seems probable that [wartime] changes in diet have resulted beneficially rather than harmfully to the health of the working population. Real wages have probably not fallen. Budget schedules indicate a falling off in the use of meat and an increase in the consumption of vegetables.

CHANGES IN FATS ABSORBED BY FRIED FOODS

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The literature concerning the decomposition products of fats is meager. Furthermore, most of the references are of interest to the commercial chemist and paint manufacturer and throw no light on the subject of what happens to fats when foods are fried in them.

Several investigators report changes in heated edible fats. Some results of Fulmer and Manchester,¹ which agree with those previously reported by Holde and Pelgry and by Tortelli and Ruggeri (cited by Tolman and Munson²), show that the iodine number of cottonseed oil decreases on heating for thirty minutes from 110.1 to 108.1 when the heating is done at 180°C, and to 106.3 when heated at 270°. The acidity changes under similar conditions from 0.06 per cent to 0.054 per cent and 0.880 per cent, respectively, for 180° and 270°. If lowering the iodine number is considered as a rough indication of oxidation, and increase in acidity as due to hydrolysis, it may be seen that these two changes, while distinctly measurable, are not very marked.

The first temperature (180°C.) comes within the range of temperatures ordinarily used in the deep frying of foods but represents the change in oil heated in a test tube and not dispersed through a food. Decomposition would be expected to proceed at a faster rate in a fat whose surface area was thus increased. Blunt and Feeney³ found that the presence of a finely divided foreign substance such as flour or charcoal, lowered the temperature at which "smoke" became visible in a pan of heated fat, and this fact they attributed to increased surface area.

Masters and Smith⁴ report the changes in chemical constants of butter fat and cottonseed oil baked with flour as a pastry. The iodine number of their cottonseed oil diminished from 106.5 to 89.3 when the oil was extracted from some over-browned, thin pastry. This was the most marked of the numerous changes they reported. The changes in the butter fat were somewhat less than in the cottonseed oil, and the initial acidity had also been less.

¹ Fulmer, E., and Manchester, T., The Effect of Heat Upon the Physical and Chemical Constants of Cottonseed Oil. *Jour. Amer. Chem. Soc.*, 30 (1908), p. 1477.

² Tolman, L. M., and Munson, L. S., Olive Oil and Its Substitutes. *U. S. Dept. Agr., Bur. Chem. Bul. No. 77*.

³ Blunt, K., and Feeney, C. M., The Smoking Temperatures of Edible Fats. *Jour. Home Econ.*, 7 (1915), p. 535.

⁴ Masters, H., and Smith, L., The Changes in the Character of Fats During the Process of Cooking. *Analyst*, 39 (1914), p. 347.

It was not possible, they reported, to make a statement as to the mechanism of the changes, though hydrolysis certainly did not take place to any great extent. The changes were slight unless the pastry was very thin or over-browned.

While it is an accepted fact that acrolein is formed during the decomposition of fats by heat and is present in the smoke of scorching fat, the literature does not reveal any proof that acrolein has been isolated from fried foods nor even that substances giving an aldehyde reaction have been demonstrated. Acrolein is such a reactive compound that failure to isolate it would not be surprising, and even though it were present in fried foods, it would probably be there in very small quantities.

The literature on the amount of fat absorbed in frying is also meager. Holmes and Lang⁵ state, though without giving experimental data, that there is a different temperature for each of the various fats at which the least absorption takes place in doughnuts. Williams and Gray⁶ state that greasiness is somewhat dependent upon the kind of fat used but much more upon the food to be cooked and the temperature employed. The amount of cottonseed oil absorbed by doughnuts fried for five minutes at 200°C. is reported by McKee⁷ as varying from 34 per cent in a standard recipe to 45 per cent in a very rich one.

Whether fats so altered in their chemical constants by high temperature are utilized by the body in the same way as unheated fats is a question which very naturally arises. Langworthy and Holmes⁸ report high digestibility of some animal and vegetable fats in which heating was carefully avoided; and Smith, Miller, and Hawk⁹ found hydrogenated cottonseed oil to be as satisfactorily utilized by normal adults as lard. The latter investigators fed their fats in fried potatoes.

All the points mentioned thus far are ones which need investigation—the amounts of different fats absorbed by various types of fried foods under different conditions of time and temperature; the kind and extent of decomposition which takes place in the fats absorbed; the effect of

⁵ Holmes, A. D., and Lang, H. L., Fats and Their Economical Use in the Home. *U. S. Dept. Agr. Bul. No. 469* (1916).

⁶ Williams, A. W., and Gray, C. E., Fats and Oils in Cookery. *Univ. of Ill. Bul. No. 47* (1917).

⁷ McKee, M. C., Fat Absorption in Frying Doughnuts. *Jour. Home Econ.*, 10 (1918), p. 18.

⁸ Langworthy, C. F., and Holmes, A. D., Digestibility of Some Animal Fats. *U. S. Dept. Agr. Bul. No. 310* (1915); and Digestibility of Some Vegetable Fats. *U. S. Dept. Agr. Bul. No. 505* (1917).

⁹ Smith, C. A., Miller, R. J., and Hawk, P. B., Studies on the Relative Digestibility and Utilization by the Human Body of Lard and Hydrogenated Vegetable Oil. *Jour. Biol. Chem.*, 23 (1915), p. 505.

this decomposition on the digestibility of the fat. This paper gives some experimental data on the first two points.

EXPERIMENTAL

In the experiments described in this paper, potato chips and a flour mixture were fried in lard and in Wesson oil to determine the amount of fat absorbed and the extent of decomposition in the fat taken up during frying. The effect of changing the time and temperature of frying was noted. The degree of decomposition was indicated by changes noted in the fats extracted from the fried foods as compared with the original fat. The determinations made were for iodine number, per cent of free fatty acid, and relative amounts of reducing substance (acrolein, etc.). Bulk lard of good quality and Wesson oil were chosen as typical animal and vegetable fats.

FRIED POTATO CHIPS

Method of cooking. Potatoes are satisfactory for frying experiments because, on account of their low fat content and the ease with which they can be thinly sliced, they offer the minimum of complications and the maximum of exposed surface for the absorption of fat. Sound, medium sized, northern grown potatoes were used, without reference to any special variety.

All the frying was done in a two-quart, gray enamel sauce-pan with a diameter at the bottom of 6 inches; diameter at the top 8 inches; depth $3\frac{5}{8}$ inches; depth of fat $1\frac{1}{2}$ inches.

The potatoes were sliced on a potato-slicer to a thickness of 1 to $1\frac{1}{2}$ mm.; the slices were laid out separately on paper toweling until the surface water was absorbed, then turned and dried on the other side, the whole drying process lasting about ten minutes. The pieces were dropped, one at a time, into the hot fat, were turned almost continually with a wire egg-whisk until a medium golden brown color, then lifted out and drained on paper toweling. Only three to five slices could be fried at one time as more than this caused considerable variation in the temperature.

The frying was done at three different temperatures, 170°, 190°, and 210°C. The temperature varied only 3° above or below that recorded in the tables. No smoke was visible at any time during the frying in Wesson oil; the lard did not smoke at 170°C. but when it was being

heated to 190° for the second set of fryings, smoke became faintly visible at 175° and it smoked slightly during the frying at 190°. When heated to 210°, smoke became visible at 180° and the lard smoked violently all during the frying process. The same portion of fat was used for frying at all three temperatures and the fat drained free from sediment between the different temperatures. The fryings at all temperatures were not done in one day.

All the potato chips were presumably cooked to the same brown color although at some temperatures they were more evenly browned and of better appearance than at others, probably due in part to differences in the potatoes as well as to differences in temperature. The chips fried in lard at 170° and 190° were the best looking; those fried in lard at 210° and in Wesson oil at 190° and 210° were a little overbrowned on the edges before the center had thoroughly cooked. The chips fried in lard at 210° had a bitter burned taste though none of those fried in either fat at other temperatures had this flavor of burned fat.

It seemed to require a longer time to reach the desired brownness in lard than in Wesson oil at the corresponding temperature (see table 1). The whole time of frying was so very brief in all cases, twenty to ninety seconds, that this difference would not be noticed in frying under ordinary home conditions. This same difference in time was observed in a second series in which slices from the same potato were used in both fats, the fryings done one immediately after the other and the piles of fried potatoes compared side by side for color. The chips fried in lard and in oil were identical in color and appearance, yet it required 75 seconds to reach this color in lard and only fifty seconds in the oil (series II). Whether this time factor is really an important one and what the explanation of it may be, is not known.

Fat absorption. After frying, the potato chips were ground in a mortar, spread out on watch crystals and dried to constant weight at 50°C. The loss was calculated as moisture. The dried material was extracted for six hours with anhydrous ether in an Underwriter multiple extraction apparatus; the per cent of fat is calculated on the basis of undried weight.

The amount of water in the potato chips was very small, ranging from a few tenths of a per cent in those fried at the highest temperatures to about 1.5 per cent in the ones fried at 170°.

The fat absorption was about the same at all temperatures and in both fats (table 1). Absorption of the two fats differed usually by

about 2 per cent, and the Wesson oil series showed as much variation within itself. The per cent of absorption in Series II, where the same potato was used for both fats, was 34.94 per cent in lard and 34.18 per cent in Wesson oil. The average absorption in Series I was 37.66 per cent. The average of many analyses of commercial chips given in *Bulletin 28, United States Department of Agriculture* is 39.8 per cent fat.

The slight variation in fat content in the potato chips seems, therefore, to depend upon differences in the absorbing power of the potatoes themselves rather than upon differences between the lard and Wesson oil or between frying at high or low temperatures. Different conclusions are drawn from the experiments on frying dough mixtures (see p. 449).

TABLE 1
Per cent of fat absorbed by fried potato chips

| SERIES | KIND OF FAT | FRYING TEMPERATURE | TIME OF FRYING | WATER IN CHIPS | FAT IN CHIPS |
|--------|-----------------|--------------------|----------------|-----------------|--------------|
| | | degrees C. | seconds | per cent | per cent |
| I | Lard..... | 170 | 90 | 1.21 | 38.95 |
| | Lard..... | 190 | 55 | 0.68 | 38.18 |
| | Lard..... | 210 | 20 | 0.10 | 38.87 |
| | Wesson oil..... | 170 | 50 | 1.65 | 36.51 |
| | Wesson oil..... | 190 | 30 | 1.04 | 34.40 |
| | Wesson oil..... | 210 | 20 | 0.34 | 37.10 |
| II | Lard..... | 170 | 75 | Not determined. | 34.94 |
| | Wesson oil..... | 170 | 50 | Not determined. | 34.18 |

Chemical changes in extracted fats. Methods used. To determine the chemical changes in the fat absorbed by fried potatoes, the fat from large quantities of chips, about 50 grams, was extracted with anhydrous ether in a large Soxhlet apparatus. The changes from the original which were observed in the iodine number and amounts of free fatty acids and aldehyde substances (acrolein, etc.) were taken as a measure of the decomposition of the fat. The iodine number was determined with Hanus' solution according to standard methods given by Leach, p. 489, and free fatty acids, calculated as oleic acid, according to Leach, p. 499. (Food Inspection and Analysis).

To show the presence of acrolein or other aldehydes and to give an indication of the relative amounts in the different fats, Tollen's alde-

hyde reagent was used (see Sherman's Organic Analysis, p. 34). One cubic centimeter of oil or melted lard was introduced into a slender 10 cc. graduate, kept warm in hot water, Tollen's reagent was added up to the 5 cc. mark, the tube shaken, and the relative amount of blackening noted after ten minutes. The whole series of fats was examined at one time to get comparative differences. The tube showing the most reduction, an almost immediate blackening, was called 10 and the others rated according to their amounts of reduction. These marked differences were noticeable in the aqueous layer in the tube. The fat layer



FIG. 1. SHOWING RELATIVE AMOUNTS OF REDUCING SUBSTANCES (ACROLEIN, ETC.) IN SAMPLES OF FATS. TESTED WITH TOLLEN'S REAGENT

In each series: 1, fresh unused fat; 2, fat in pan after all fryings; 3, extracted from potatoes fried at 170°; 4, extracted from potatoes fried at 190°; 5, extracted from potatoes fried at 210°.

in all the lard tubes was a dirty tan color and that in all the Wesson oil tubes a black-brown. The ether extract of 120 grams of raw potato was also tested and showed a noticeable but slight reduction of Tollen's. Since each cubic centimeter of extracted fat, however, contained the reducing substance of only about 7 grams of potato, the reduction of the potatoes themselves may be ignored.

Results. None of the changes in the extracted fats—iodine number, acidity, and aldehyde substances—was very marked and all three ran fairly parallel (table 2 and figure 1).

TABLE 2
Chemical changes in fats absorbed by fried potato chips

| SERIES | KIND OF FAT | FRYING TEMPERA- TURE | TIME OF FRYING | IODINE NUMBER | ACIDITY (AS OLEIC) | REDUCTION OF TOLLEN'S |
|--------|--------------------------------------|----------------------------|-------------------|------------------|-----------------------|-----------------------------|
| | | <i>degrees C.</i> | <i>seconds</i> | | <i>per cent</i> | |
| I | Lard, fresh..... | | | 58.61 | 0.43 | 0.5 |
| | Lard, extracted..... | 170 | 90 | 48.98 | 1.15 | 10.0 |
| | Lard, extracted..... | 190 | 55 | 56.16 | 0.58 | 5.0 |
| | Lard, extracted..... | 210 | 20 | 55.08 | 0.60 | 2.0 |
| | Lard, in pan after frying..... | | | 54.16 | 0.54 | 1.0 |
| | Wesson oil, fresh..... | | | 104.5 | 0.06 | 0.2 |
| | Wesson oil, extracted..... | 170 | 50 | 104.0 | 0.12 | 0.5 |
| | Wesson oil, extracted..... | 190 | 30 | 103.6 | 0.18 | 0.5 |
| | Wesson oil, extracted..... | 210 | 20 | 103.2 | 0.22 | 2.0 |
| | Wesson oil, in pan after frying..... | | | 102.6 | 0.13 | 0.5 |
| II | Lard, fresh, unused..... | | | 61.91* | 0.38 | 0.5 |
| | Lard, extracted..... | 170 | 75 | 59.57 | 0.46 | 7.5 |
| | Wesson oil, fresh, unused..... | | | 106.2 | 0.06 | 0.2 |
| | Wesson oil, extracted..... | 170 | 50 | 106.5 | 0.09 | 0.5 |

*Uncertainty about this value. True value probably higher.

TABLE 3
Changes in fats used in deep frying (Landenberger and Leavell, 1915)

| | KIND OF FAT | IODINE NUMBER | ACIDITY (AS OLEIC) |
|-------------------|--|------------------|-----------------------|
| | | | <i>per cent</i> |
| Landenberger..... | Armour Simon Pure Leaf Lard—Fresh..... | 57.1 | 0.15 |
| | In pan after frying..... | 56.6 | 0.26 |
| | Extracted from fried potato..... | 54.0 | 1.31 |
| | Extracted from sautéed potato..... | 53.6 | 1.74 |
| | Snowdrift—Fresh..... | | 0.06 |
| | In pan after frying..... | | 0.26 |
| | Extracted from fried potato..... | | 0.62 |
| Leavell..... | Crisco—Fresh..... | 84.75 | 0.14 |
| | In pan after frying..... | | 0.17 |
| | Extracted from fried potato..... | 78.02 | 0.49 |
| | Beef suet—Fresh..... | 37.28 | 0.68 |
| | In pan after frying..... | 36.90 | 0.66 |
| | Extracted from fried potato..... | 36.58 | |
| | Wesson oil—Fresh..... | 111.4 | 0.02 |
| | In pan after frying..... | 109.4 | 0.04 |
| | Extracted from fried potato..... | 108.5 | |

Length of time of frying affected the amount of decomposition more than did increase in temperature. For example, the iodine number of lard extracted from the potatoes fried at 170° for one and one-half minutes dropped to 48.98 from an original value of 58.61 and the acidity increased from 0.43 per cent to 1.15 per cent. At the much higher temperature for only twenty seconds, the iodine value fell only to 55.08 and the acidity rose to 0.60 per cent. The acrolein test was also markedly stronger for the lard extracted from cooked potatoes. Figure 1, presenting a series of the acrolein tests, shows the different intensities of this reduction reaction. With another potato and a different sample of lard (series II), the three values changed considerably but not so much as in series I.

The Wesson oil showed less decomposition than the lard. There was so little change in the oil at any temperature, that any influence of time of frying was negligible. The extreme change in iodine number in the whole Wesson series was from 104.5 to 102.6. The acidity at 210° rose to 0.22 per cent but even this was only one-half the acidity of fresh, unused lard. The high initial acidity of the lard probably hastened its further decomposition.

The color of the extracted fat was not necessarily an indication of the amount of decomposition of the kind measured by iodine number, acidity, etc. The lard at 170° which showed the greatest change in its three factors, was white and fresh-looking while the other lard samples were darkened in color but were comparatively slightly changed. Slight murkiness and darkening of color were all the noticeable differences in the appearance of the Wesson oil and this was much the same at all temperatures.

These results agree in general with others obtained a few years ago in this laboratory by Loraine Landenberger and by Gladys Leavell. Their data on potatoes fried in snowdrift, crisco, Wesson oil, lard, and beef suet showed that the changes in the fats absorbed by the foods were greater than those in the fat in which the material was fried. The lowering of the iodine number was coincident with the increase in free fatty acid. They fried larger quantities of potatoes at one time than were fried in the writer's experiments and therefore had much more variation in the temperature of the fat during a single frying. Their conditions were much like those in home frying. A part of their unpublished results is given here (table 3).

FRIED DOUGH MIXTURE

The results with fried potatoes needed further confirmation with another type of food material. Some of the variations in the potato were very probably due to individual differences in the potatoes themselves.

A mixture of flour, water, baking powder, and salt, of such consistency that it could be rolled out on a board, was fried as doughnuts. This mixture had a constant composition throughout the experiment and could be used for results on long-time frying without burning, as the potatoes could not. The dough made possible conditions similar to those of frying doughnuts without introducing the variable factors in the fat of the egg, milk, and shortening, with which a doughnut is made.

Method of frying dough mixtures. Proportions used: flour (ordinary bread), 100 grams + 3 grams on rolling-board; Ryzon baking powder, 6 grams; salt, 2 grams; distilled water, 70 grams.

The dry ingredients were sifted together three times, then the water added slowly and mixed like biscuit dough with a spoon. To get a uniform thickness, the dough was rolled out on a floured board between glass rods 0.8 cm. in diameter. From the above proportions, 8 doughnut shaped pieces were cut and the scraps of dough discarded. The pieces were 5 cm. across with a hole of 2.1 cm. in diameter. A fresh batch of dough was made for each one of the series indicated in the tables and all four sets of fryings in one fat were completed in one period, the whole operation of mixing the doughs and frying taking about two and one-quarter hours.

Two or three pieces of dough were fried at a time, causing a variation in temperature of not more than 3° above or below that given in the tables. The pieces were turned continually during the frying and drained on paper. The time of frying was longer in this experiment than in that with the potatoes; two minutes were given as enough to just cook the dough and six minutes as about the maximum time ever used in frying doughnuts.

No smoke was visible during any of the frying in Wesson oil but the lard began to smoke at 185° and smoked violently all during the frying at 210°. After all the fryings were completed at 170°, the fat was drained free from burned flour and sediment before heating up to 210°.

The color of the dough fried in different fats at the same temperature

was practically identical. This dough browned very slowly as would be expected, since it contained no egg, sugar, or other substance to give it color; the degree of brownness could not be taken as an indication of when the dough was done as in the case of the potatoes. That fried at 170° for two minutes had a thin, soft crust, scarcely browned at all; that fried at 170° for six minutes had a deep greasy crust, light brown but moderately crisp. Frying at 210° for two minutes yielded a medium brown product, like a light colored doughnut, with a thin, soft crust. The only one with a good doughnut-brown color was the one fried at 210° for six minutes and this had a deep crust and was quite dry and crisp throughout, though not greasy.

It should be noted that the potatoes were fried to a certain degree of brownness at all temperatures and in both fats while the dough was fried for a definite length of time regardless of color.

Fat absorption. The dough was cut into small pieces with the scissors immediately after frying, was dried at 50°C., ground on a meat grinder, then dried again. The quantity of material for each part of the series (corresponding to eight pieces of fried dough) was extracted with anhydrous ether in a large Soxhlet apparatus and the ether extract filtered and evaporated. The moisture and fat are both calculated on the basis of the fried dough (table 4).

TABLE 4
Per cent fat absorbed by fried dough mixture

| KIND OF FAT | FRYING TEMPERATURE | TIME OF FRYING | WATER IN FRIED DOUGH | FAT IN FRIED DOUGH | |
|-----------------|-----------------------|----------------|-------------------------|--------------------|-----------------|
| | | | | Moist basis | Dry basis |
| | <i>degrees C.</i> | <i>minutes</i> | <i>per cent</i> | <i>per cent</i> | <i>per cent</i> |
| Lard..... | 170 | 2 | 29.73 | 14.45 | 20.56 |
| | 170 | 6 | 18.49 | 24.84 | 30.47 |
| | 210 | 2 | 24.00 | 10.82 | 14.23 |
| | 210 | 6 | 15.77 | 13.50 | 16.02 |
| Wesson oil..... | 170 | 2 | 26.87 | 14.95 | 20.44 |
| | 170 | 6 | 19.35 | 24.86 | 30.82 |
| | 210 | 2 | 29.67 | 7.90 | 11.23 |
| | 210 | 6 | 16.92 | 14.47 | 17.41 |

Time and temperature of frying caused a variation in moisture content in the direction expected. The amount of water was about 28 per cent after two minutes at 170°C. and only 18.5 per cent after six minutes at the same temperature. The moisture was lowest, of course,

after 210° for six minutes, only 16 per cent. The water content of the raw dough had been about 45 per cent.

Under the same condition of frying, the doughs absorbed approximately the same amounts of lard and Wesson oil. This is at variance with the statement of Holmes and Lang⁵ that there is a different temperature for each fat at which the least absorption takes place. The absorption was least at 210° for only two minutes (about 10 per cent) and greatest at 170° for six minutes (about 25 per cent). Attention is called again to the constant absorption of fat by potato chips at all three temperatures used. With the dough, unlike the potatoes, long time and low temperature of frying mean more fat absorbed.

Chemical changes in extracted fats. Decomposition of the fat was measured, as in the potatoes, by the degrees of change in iodine number and amounts of free fatty acids and aldehyde substances (acrolein, etc.) (table 5). No corrections were made for the fat of the flour itself, since the quantity was very slight and the same amount was present in every case.

TABLE 5
Chemical changes in fats absorbed by fried dough mixture

| KIND OF FAT | TEMPERATURE | TIME | LARD | | | WESSON OIL | | |
|---------------------------|-------------|---------|---------------|--------------------|-----------------------|---------------|--------------------|-----------------------|
| | | | Iodine number | Acidity (as oleic) | Reduction of Tollen's | Iodine number | Acidity (as oleic) | Reduction of Tollen's |
| | degrees C. | minutes | | per cent | | | per cent | |
| Fresh..... | | | 61.91* | 0.38 | 0.5 | 107.0 | 0.05 | 0.2 |
| Extracted from dough..... | 170 | 2 | 61.87 | 0.44 | 2.0 | 106.4 | 0.14 | 0.5 |
| Extracted from dough..... | 170 | 6 | 58.76 | 0.58 | 10.0 | 106.5 | 0.14 | 0.5 |
| In pan after frying..... | 170 | | 61.54 | 0.41 | 2.0 | 106.8 | 0.05 | 0.3 |
| Extracted from dough..... | 210 | 2 | 60.61 | 0.51 | 5.0 | 105.1 | 0.24 | 1.0 |
| Extracted from dough..... | 210 | 6 | 48.32 | 2.15 | 20.0 | 105.1 | 0.35 | 2.0 |
| In pan after frying..... | 210 | | 60.69 | 0.40 | 3.0 | 105.7 | 0.08 | 0.5 |

* Uncertainty about this value; true value probably higher.

As with the potatoes, the lard decomposed very much more than the Wesson oil. The extreme change in the iodine value of the lard was from 61.91 to 48.32, and the most in the Wesson oil was from 107 to 105.1. The corresponding change in acidity was an increase in the lard from 0.38 to 2.15 per cent and in the oil from 0.05 to 0.35 per cent.

The decomposition increased very fast when the food was kept a long time in the lard and the increase was greater the higher the temperature.

The change went on very rapidly even at 170°; at the temperature of 210°, the iodine number of the extracted lard changed from 60.61 to 48.32 in four minutes and the acidity increased from 0.50 to 2.15 per cent.

The Wesson oil decomposed so slowly that even six minutes at 210° did not noticeably affect the properties of the fat. The fat in the pan in both cases, changed more slowly than that dispersed through the food.

Here again, the color of the fat did not completely indicate the kind of decomposition measured by iodine value, acidity, and acrolein. The lard from dough fried at 210° for six minutes was oily and greenish yellow and had a repulsive rancid odor. The one at 170° for six minutes had a marked rancid odor and showed marked changes in its chemical constants but was quite white and fresh-looking. The other two samples of lard, showing comparatively little change in chemical constants, were a deep ivory-yellow color but had little odor of rancidity. There was little change in the appearance of the extracted Wesson oil and never a pronounced rancid odor.

SUMMARY

A. Absorption of fat

1. The lard and Wesson oil were absorbed to approximately the same extent under identical conditions of frying. This was true in both potatoes and fried dough.

2. Potato chips, fried at the three temperatures 170°, 190°, and 210°C. absorbed practically the same amounts of fat; slight differences were apparently due to differences in the absorbing power of the potatoes themselves rather than to variations in fats and temperature. The potatoes were fried to the same degree of brownness at all temperatures, while the doughs were fried for definite lengths of time, regardless of color.

3. With the doughs, both temperature and length of time of frying determined the amount of fat taken up. More was absorbed when the cooking was prolonged and the temperature low.

B. Chemical changes in the fats absorbed

1. The changes in iodine number, acidity, and relative amounts of reducing substances (acrolein, etc.) in the fats extracted from the fried

potatoes and dough mixtures, ran fairly parallel. These changes were measurable, though seldom great.

2. Lard showed more decomposition than the Wesson oil.

3. Long cooking increased the decomposition even more than high temperature, particularly in the lard. For example, the lard extracted from fried doughs showed more decomposition after 170° for six minutes than after 210° for only two minutes. Decomposition was very marked after 210° for six minutes.

4. The fat absorbed by the foods during frying underwent greater changes in chemical constants than the fat in which the food was fried.

QUERIES

Does your grocer stand on the edge of the sugar and flour bins to take groceries from the shelves?

Is food protected from dust, flies and handling?

Are vegetables raised the required 18 inches from the floor?

Is food protected from cats and dogs?

Are bakery products covered during delivery to the shop?

If any one of these questions cannot be answered favorably, report the fact, over your signature, giving the name and address of the dealer. An effort will be made to assist him in correcting this condition.

The above was issued by the Food Department of the Women's Municipal League of Boston. Should not every city and town have a similar organization that would offer such help?

FOR THE HOMEMAKER

A PLAN OF SPENDING FOR THE HOME

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The question of the financial administration of the household is one that has been discussed and taught in schools of home economics. It has been written about in magazines and papers by economists and business men. It has been the subject of public lectures and has had its place in the programs of women's clubs.

The majority of women, however, have never taken the matter very seriously. Very few have had training in the keeping of accounts and most have looked upon it as a burden. They have either never attempted to keep a household account book, or, if they have started, they have discontinued it after a time.

The higher cost of almost all commodities is causing women to see that they must plan much more carefully than hitherto, that they must know the intrinsic value of articles purchased, that they must select more wisely and use to better advantage the things needed in the household. Everywhere there is felt the need of better business methods. We are beginning to appreciate the fact that the same fundamental principles must be applied in carrying on the business of the home as are used by industrial or commercial firms.

The successful business firm must systematize every phase of its work, must know the purchasing power of the dollar, the values in machinery, in convenient arrangement of equipment, in processes and methods, in raw materials, in finished products, in time and human energy. The firm must constantly study changing conditions as they present themselves, readjust values when necessary, and improve the methods of work and the quality of products put out.

Practically the same problems present themselves to the woman at the head of the home. She is, so to speak, the business manager of the home. The house or home is her plant. She is concerned with the

arrangement and equipment of that plant to meet the needs of the family both as a group and as made up of individuals; with the organization and execution of the work in the plant; with the purchase and use of materials and supplies; with the administration of the family income.

The raw materials are the various commodities that are essential to efficient life of the family group. The finished product is the well-developed all-round citizen.

Just as no business firm can succeed without keeping books and knowing exactly where it stands financially, so no home, in these days, can be successfully financed and administered unless the woman in the home knows values, selects wisely, makes the best possible use of commodities and keeps some record of receipts and expenditures, the money expended being apportioned according to a definite plan of spending worked out to meet the needs of the individual family.

Every household should have such a Plan of Spending. It is difficult to work out a plan unless the woman has for a period of one year at least, and better for three years, a record of (1) the amount and kind of expenditures made and the value of each; (2) a classified list of expenditures so that she may know what is being spent for each group in the classification. The household account book should be so arranged as to give her this information clearly and easily.

The account book should provide for the following:

Spaces to show the total receipts of the household and the sources of such receipts, whether from salary, interest on investments, rents from properties, or goods sold, as, for example, the butter and egg money which the woman of the farm usually has for her own use.

A date column to indicate when moneys are received and expenditures made.

A column to record the amount and kind of articles purchased.

A column in which to place the value of articles purchased for the household, the term value having two interpretations; (1) the cost of articles purchased at the store (2) the amount that would have been received if the articles had been raised on the farm and sold from the farm or garden.

Columns for the classified expenditures grouped under such headings as the following: Food, Clothing, Operating Expenses, Property Expenses, Health and Unclassified Items, The Life of the Home.

Nutrition specialists are urging a larger use of milk and the products

of the dairy, of eggs, fruits, vegetables, and cereals, and a more moderate use of meat. Therefore, the following sub-divisions for food are suggested:

FOOD:

Meat: includes beef, veal, mutton, lamb, pork, and poultry.

Fish: includes oysters, clams, and fish of all kinds.

Eggs:

Milk and Milk Products (except butter): whole milk, cream, skim-milk, buttermilk, and various kinds of cheese.

Butter:

Fats Other Than Butter: Fat of meat as suet, lard, etc., olive and other vegetable oils and fats.

Fruits and Vegetables: All fruits and vegetables used, either fresh, canned, or dried.

Grain Products: Flours and meals of all kinds; bread, rolls, etc., breakfast cereals; hominy and rice; macaroni and spaghetti; crackers.

Other Groceries: All other foodstuffs not listed in any one of the other food groups, as coffee, sugar, spices, etc.

Items included in the other divisions of the classified list are as follows:

CLOTHING—Textile fabrics for making garments at home; ready-made garments; hats and shoes; other clothing as stockings, gloves, etc.; care, repair, cleaning and pressing of garments; dressmaking and tailor's bills.

OPERATING EXPENSES—Heat, light, ice, telephone, soap, laundry, wages paid for work in the house, renovation, breakage, and repairs.

PROPERTY EXPENSES—Rent (if property is not owned); (if owned) taxes, interest, fire insurance, water rent, repairs; car-fares, (if paid going to and from work), etc.

HEALTH AND UNCLASSIFIED ITEMS—Doctor, nurse, medicine, dentist; stamps, stationery, and any other expenditures not included in preceding groups.

THE LIFE OF THE HOME—This group includes (a) household furnishings, (b) investments, and (c) recreation, education and religion, since these are things that go to make up what may be called the *satisfactions* of life.

Household Furnishings: New furnishings, as furniture, linen (table and bed), rugs, curtains, etc.

Investments: Bonds, savings accounts, insurance (life and health), etc.

Recreation, Education, and Religion include: Church and benevolences, gifts, vacations, travel, picnics, theatre, books, magazines and papers, art, music, lectures. Car-fare other than trips to and from work.

The plan as outlined above has been worked out in *A Home Account Book*.¹

The book has a summary page to record the monthly totals from which the yearly total is made. This page may also provide a form to compare the actual expenditures as made for the year and the suggested apportionment of the income according to standards worked out by economists.

A study and comparison of expenditures as shown by daily purchases and monthly totals will help the woman to make readjustments if she finds that she has overspent or underspent on any one group in the classification.

As a guide for the woman who has not been accustomed to keeping accounts, a sample page is included in this book showing how to enter items in the general column and to distribute them in the classified list, how to make the monthly totals and subtractions to determine how the account stands. To aid in listing articles in the right column the preface indicates the items belonging in each division of the classification.

No doubt, the work of keeping the accounts for the first two or three months will require a considerable amount of time on the part of the woman of the home. But, if it is made a part of the regular daily program, the accounting will be taken care of just as any other work of the household.

The work will bring its own reward. If expenditures are made according to a carefully worked out Plan of Spending, without question the result will be that a larger share of the income will be apportioned for the Life of the Home. This will make possible the broader and fuller life of the family group because more of the things may be provided that contribute to the "durable satisfactions" of life.

¹ Prepared by the Home Economics Extension Service, Pennsylvania State College. Price 55 cents.

THE PARTNER AT HOME

THE PARTNER AT HOME, through wisely directing her household, increases the family savings and serves the State, yet secures the comfort of her family, by contributing productive labor, by planning her use of time, by lessening the waste of material, by portioning the income. Saving is the household's financial service to the state. It safeguards the family and serves the nation.

Contributing Her Labor

Her household labor adds to the value of material. The work she does in cooking food, in making and repairing clothing, in cleaning the house, is productive labor. The difference in value of the raw material and the finished product is part of her contribution to the family income.

Her earning power may be increased. She may fit herself for a definite task by a part time vocational course; make money from poultry, eggs, butter, fruit, using the parcel post market; sell goods that she has canned; find other part time employment.

Her leisure may be invested in fuller life for the family—music, reading, recreation; in service to the community, making it a better place in which to live.

Planning Her Time

Due value is given to her time. She balances the time needed to save material against the worth of the material saved. She counts time as money, and saving time as saving money.

Her time is planned. She uses time to save time. Time spent in planning is saved in doing. Planning saves labor, saves materials, saves money. Better planning of their household work helped American women make products worth \$68,000,000 for the Red Cross in 1918.

Saving Materials

She provides for her family right food, suitable shelter, adequate clothing, reasonable comforts.

She carries over war thrift into peace times.

She enlists her children in the care of all materials.

She teaches them care of public property, right use of public utilities.

She saves food material by thoughtful buying, by careful use.

She saves clothing by the stitch in time, by proper care.
She saves fuel and supplies by wise planning, by avoiding small wastes.
She salvages all household waste, making it available for other uses.
She asks from the community clean streets, clean air, clean water,
that her carefulness be not discounted by community negligence.

Portioning the Income

She knows what the family income is.
She sets aside as savings a portion of all money received.
She makes a spending plan, deciding how much can go for food,
for clothing, for house expenses, for recreation.
She makes a food budget, a clothing budget.
She keeps accounts to check her spending.
She makes a business of her buying. She knows her materials.
She plans her purchases and does not buy on impulse.
She takes account of stock and makes a list of her needs.
She chooses a reliable dealer. She checks up measures and weights.
She reads the labels on package goods and compares their cost with
those sold in bulk.
She considers quantity versus small amount.
She considers the advantage of Cash and Carry, or Self Serving,
stores in lessening the cost of goods.
She buys things when they are plenty, getting them for the least cost,
and helping to keep prices down.
She knows that selfish demands raise the cost of living for all.
She gets full value for her money. She pays her bills promptly.
She watches the market lists in newspapers.
She asks that her community have Fair Price Lists.
She puts aside for future use extra money saved by good buying.

Serving the State

She is responsible for the wise management of 20,000,000 households.
• Billions of dollars pass through her hands each year.
Her demands control American industry.
Her intelligence saves money for 20,000,000 families.
Her care directs the habits of 40,000,000 children.
Her wise control of her household trains her children in thrift, con-
tributes to community savings, gives her a share in her government.

AN INCIDENT

ELVA M. DICKEY

I was gazing fixedly at two slender, insolently flirtatious young women, endeavoring to decide which had the prettier dress. They were fashion-plates, and while the garments were adapted to giddy and attractive youngness, there was grave doubt as to whether a staid and fat person of thirty-five would prove becoming to these particular styles. It was absorbing, this argument between fat thirty-fiveness and a fatally persistent youthful liking for ruffles—one of those wayward tastes which refuse to “grow-up” and become old along with the rest of one.

The situation was critical when I became aware of other ladies also interested in fashions, and, amused, I shamelessly “listened in.”

“Mama, my dolly needs a new dress. I want to buy her one and make it up before she goes on her vacation.”

“Well, I have no objection. What kind of a dress does she need?”

“I think she ought to have a nice dress; something pretty, and I could choose the pattern right now.”

Then followed a very interesting period. This was a pretty dress, but did Dolly need another light dress? Didn’t she already have enough afternoon and party dresses? Where was Dolly’s vacation to be spent—in the mountains? What sort of clothes would she want? Surely light dresses enough for afternoon and evening, but she must not expect to wear that sort of thing all the time; dainty dresses would be ridiculous for mountain-climbing. And thus a more useful pattern was selected.

Then the material to be used was under discussion. Should it be of silk? Oh no! not at all advisable! Not even of dark silk? No; that might do nicely in town, but would not make a good “sport” suit. So it narrowed down to a good blue serge, with white collar and cuffs.

And I thought, as I watched the child-mother and the real mother walk away, “What a splendid thing! what a really fine thing!” The interest and patience of this mother was doing much. There was actual community of interest between herself and her little daughter; they were evidently good comrades. Moreover, in this selection of a doll’s pattern and a half-yard of cloth, there had been a perfect lesson in buying. Quite unconsciously the little girl had absorbed valuable information on buying a new dress; the finding of a suitable material; the selection of good quality; the choice of right colors, and the real thrift of neither buying that which is unnecessary nor of taking the wrong thing merely because it seems attractive.

EDITORIAL

The Science Section.¹ The meeting of the Science Section at Blue Ridge emphasized chiefly two distinctly different lines of work—the questions of under-nutrition in children and of experimental cookery. Mary Harper, in charge of the food education work of the New York Association for Improving the Condition of the Poor, gave a stimulating paper on the first subject, with the most recent scientific and clinical experience on nutrition classes for children. The paper was enlivened by delightful tales of her children's attitude toward their own improvement. The discussion showed plainly an encouraging development of nutrition work in many parts of the country, rural and urban, north and south. The car load of cows, imported in more than one southern county as a result of the work of the county agent, is one excellent example.

The rest of the two sessions was devoted to the discussion of experimental cookery in both its manipulative and chemical aspects. Dr. Minna C. Denton, of the Office of Home Economics, reported on several lines of work in progress in the Experimental Kitchen in Washington, including a series of experiments on oven temperatures in cake baking, with the results shown by curves. A short paper on the same subject from Miss West of Milwaukee Downer College gave experiments based on Miss Denton's cake outline, showing the superiority of low oven temperature in cake baking. The report of Elizabeth W. Miller on vegetable cookery discussed the groups of coloring matters in vegetables, chlorophyll, caratinoids and flavores and xanthones, and their changes on heating with acid (the vegetable acids themselves or added acid) and with alkali (alkaline tap water or soda). Chlorophyll, for example, turns olive green with acid, and brighter green with alkali. Good flavor in vegetables is partly dependent upon volatilization of some substances. These volatile substances, from some vegetables at least, have been shown to contain acid and sulphur compounds.

¹ A general report of the meeting at Blue Ridge appeared in the August editorial columns.

Three papers on fat absorption and decomposition were presented. Elizabeth Sprague reported that the temperature at which various fats give off acrolein corresponds to their relative smoking temperatures. Dr. Agnes Fay Morgan and Rau Cozens gave changes in a number of fat constants before and after frying doughnuts in a fat, and also figures for the absorption of various fats in frying. Sybil Woodruff reported fat absorption in frying potatoes and a dough mixture at different temperatures and times, and differences in iodine number, acidity, and reducing substance (acrolein) in the original fat and fat extracted from fried foods.

Most of the papers are to be printed in the JOURNAL, and so are not summarized further here.

The value and method of teaching experimental cookery was discussed, most of the speakers considering it, if properly done, an important part of the training of the college student.

Several of the experimental cookery papers were partly the result of the plans for coöperative research. The Science Section hopes to develop this coöperative research further. The plan was suggested of having different individuals maintain a sort of clearing house for research in different lines. This person should be informed by members of the association of work which they may have in progress; she should stand ready to answer questions or give advice when she can, on her line, either as to subjects to be investigated or methods to be used, and in general to do all possible to further our coöperative effort.

Dr. Minna Denton, Office of Home Economics, has consented to serve in this capacity in experimental cookery, especially on the manipulative side; Dr. Katharine Blunt, University of Chicago, on the chemical side of experimental cookery problems; Dr. Ruth Wheeler, Goucher College, Baltimore, on adult nutrition. It is hoped that Dr. Amy Daniels, University of Iowa, Iowa City, will serve on nutrition of infants and children. Members who are doing work along these lines are asked to communicate with these women.

The chairman of the Science Section is desirous of bringing together any groups of workers doing similar work on these or other lines of which she may hear.

At the end of the meeting, Dr. Ruth Wheeler moved that the officers of the section be continued for a second year. The motion was carried.

KATHARINE BLUNT,
Chairman Science Section.

The Extension Section. The section was called to order at 9 a.m., June 26, with Agnes Ellen Harris in the chair. The morning was devoted to discussion of organization of home demonstration work. Dr. Bradford Knapp, chief of extension work in the South, gave an excellent report of the rise of home demonstration work, and its progress in the fifteen southern states during the last ten years, developing the fact that the character of the work was determined by the necessity for improving the economic conditions of the farm homes. The success of the work of the excellent women of the South is shown by the fact that throughout the South generally the work of home demonstration agents has commanded as great financial support as has the work of the county agents.

Florence Ward, in charge of extension work with women, North and West, followed with an account of the rapid rise during war years of the home demonstration service in the thirty-three northern and western states. Miss Ward introduced members of her staff in charge of special phases of States Relations Service. Miss Van Hoesen discussed the development of home demonstration service in the cities, and Miss Birdseye the duties of home economics specialists in extension service. Miss Hoover and Miss Frysinger outlined their special work on the staff.

In the absence of Miss Knowles of Iowa, who was to present the subject of state organization, Mrs. Jane S. McKimmon of North Carolina, gave an interesting account of the development of the present organization in that state.

The final discussion of the morning led by Dr. Knapp, Miss Ward, Miss Richardson, and Miss Stanley, concerned the Smith-Lever and Smith-Hughes work.

Miss Susie V. Powell presided over the Friday morning session.

The following home economics extension problems were presented: Home Demonstration Agents' Training Courses, The University of Illinois Plan, Miss Bunch, State Leader of Illinois; Miss Matthews of Purdue, Miss White of Ohio, Miss Hayes of Connecticut, and Mrs. McKimmon of North Carolina discussed various points in the plan presented.

A round table discussion of the types of home demonstration projects followed. Dairy Work, Leader, Jessie M. Hoover, Dairy Demonstration Agent, Bureau of Animal Industry, U. S. Department of Agriculture; Poultry Work, Susie V. Powell, Assistant Director in Charge Home

Demonstration Work, Mississippi; Clothing, Mabel Wilkerson, Textile Specialist, University of Illinois; Girls Clubs, Leader, Gertrude Warren, Boys and Girls Club Work, States Relations Service, U. S. Department of Agriculture.

Reports followed by committees appointed the day before. The Nominating Committee submitted the following report: Chairman, Miss Bunch of Illinois; Secretary, Mrs. Jane S. McKimmon of North Carolina.

The chairman of the committee to develop the policy for extension work submitted the following report:

Your committee on the policy of extension work respectfully recommends the appointment of the following committees for specific service during the coming year.

First, a committee to make a survey of home demonstration projects in cities. Chairman, Miss Hayes of Connecticut, assisted by Miss Neal of Texas.

Second, a committee to find out what is being done in definite training for extension workers; to encourage closer connection of the extension division with the college department of the institution of which it is a part; to outline a suggested course of study which will meet the needs of (a) agents who have had experience in the field, and (b) prospective agents: Miss Bunch of Illinois, Chairman; Miss Sales of New York, Miss Cresswell of Georgia, Miss McCheyne of Utah, Miss Scott of Tennessee, Miss Parrott of South Carolina.

Third, a committee to bring to the attention of the Research Committee of The American Home Economics Association research problems arising in the extension field, and to request the chairman of the American Home Economics Association to send to state leaders reports of problems in consideration in the different college laboratories. Chairman, Miss Kellar of Maryland; members, State Leaders of each of the forty-eight states.

On motion the report was accepted and passed on to the Committee on Resolutions for the American Home Economics Association.

A resolution from the textile section presented by Miss Birdseye, asking approval of the extension section was approved by vote.

Mr. Moran was introduced for a brief discussion of moving pictures as adding to recreation in extension service instruction.

The section adjourned to meet at the next annual meeting of The American Home Economics Association.

MAMIE BUNCH, *Chairman Extension Section.*

Resolutions. The following resolutions were passed at the Annual Meeting of the A. H. E. A. Other resolutions have already appeared in the JOURNAL. (See August Editorial and September, page 388.)

WHEREAS, The A. H. E. A. recognizes the unique opportunity of the Home Demonstration Agents to bring to the attention of the Association problems which require laboratory experimentation for their solution, and

WHEREAS, The Association appreciates the valuable services of the Extension Workers in securing in the homes of the country practical application of the principles of home improvement for which this organization stands, and

WHEREAS, The demand for extension service is far in excess of the supply of well-trained workers; therefore be it

Resolved, That the A. H. E. A. recommends the arrangement of home economics courses in colleges and universities, so that during the junior and senior years such electives may be chosen as will best fit the candidate for extension work to understand her field; that at least one unit in demonstration teaching be included in every teachers course, and that a special year be offered, open to graduates in home economics, providing part time for class instruction in the pedagogy of extension teaching; the details of field and office organization and part time in practice work in the field under the supervision of the extension division.

WHEREAS, The A. H. E. A. recognizing the great need for Home Economics education to safeguard, develop, and protect the interests of the American home so fundamental to a program of sound national life,

And realizing that the present provisions for the same are inadequate to meet the needs of the large groups of homemakers and future homemakers; be it

Resolved, That the A. H. E. A. urge that the present session of Congress pass the bill entitled "A bill to provide for coöperation with the states in the promotion of vocational education in Home Economics, and to appropriate money and regulate its expenditure."

That copies of these resolutions be sent to the Chairmen of the Senate and House Committees on Education and Labor, and be given to the press.

Finally, in recognition of our enjoyable week at Blue Ridge, be it

Resolved, That the Secretary be asked to express for the A. H. E. A. thanks to Dr. Weatherford of the Blue Ridge Association and his staff of fine young men and women whose kindly thoughtfulness has helped to make our stay so delightful; and especially to Miss Brooks and Miss Davis, whose able management of the dining hall proves the value of our institutional division.

That an expression of appreciation be recorded, of the cordial hospitality of the entire Southern group, and gratitude for the additional profit and pleasure we have enjoyed from the meetings of the Southern Home Economics Association.

That a friendly fellowship be expressed for the other groups in conference here, whose work for the development of a better citizenship is not unrelated to our own.

That a special vote of thanks be accorded the Program Committee and all who contributed to the success of their effort, for so arranging the program as to allow an unhurried enjoyment of all the helpful and inspiring messages it provided.

COMMENT AND DISCUSSION

To the JOURNAL OF HOME ECONOMICS:

I read with interest the remarks of Louise T. Montgomery in your June issue, under Comment and Discussion. I have the subject of Basement Laboratories so at heart that I should be very glad if you would find space in your journal to use the enclosed matter. My own practical experience, and my visitations and investigations have given me data sufficient to most strongly condemn basement rooms for teaching purposes. If through your JOURNAL anything can be accomplished in the abolishment of basement rooms for teaching, much will be done for the cause of home economics.

In two cities, one of 65,000 population, and the other 100,000 population, I introduced the work of home economics some years ago. In both of these instances the work was conducted in basement rooms. Before going to these cities to take up the work, I was informed upon inquiry that sunny and pleasant quarters were available for this new department. The cold truth was revealed to me later.

Even in the early or pioneer days of home economics, it was not excusable to place this work in basements. If basements had to be used because of lack of space then these should have been used interchangeably with other lines, so as not to require one instructor to remain in these quarters more than one teaching period. This same adjustment could be employed at the present time. This is, however, not the best or ideal solution of the problem. I do not think that basement rooms should ever be used for teaching space; let this space be used for other purposes. Rather cut down the teaching period of various branches,

or lengthen the teaching day than to use basements; a touch of the Gary System would help solve the problem.

Those who have conducted work in basements, know something of its extreme hardships and difficulties. It means working in cold, damp, and often unsanitary surroundings, amid noise and clatter from various sources. At the present time when new buildings are being erected there is no possible excuse for using basement rooms for teaching. Wherever new schools are being built, the work in home economics should be given the choice rooms, and most decidedly on upper floors. This work should be housed where there is good light, good ventilation, proper heating, possibilities of good sanitation, and opportunities for attractiveness and dignity.

It has long been recognized that food is a most important factor in the health and welfare of the individual. Good clean food makes for good citizenship.

Placing this work in basements makes it difficult to inculcate, in the minds of the less fortunate, higher ideals of cleanliness and sanitation—little is given to them for which to strive; to the more fortunate or well to do, basement laboratories are repulsive, and do much to hinder coöperation between parent and teacher.

The most efficient teaching cannot be secured from individuals whose health is below par. To keep a teacher well and healthy she must be given the proper surroundings. Basement rooms do not give this. I speak from experience of long standing on hard cold cement floors; of bad ventilation; of improper heating; of noise and clatter from furnace and engine rooms. Unpleasant surroundings furnish little incentive for vigorous teaching.

At the present day no teacher of home economics should ever accept a position until she knows absolutely the location of her work in the building; and if this work is assigned for basement rooms she is only being just to herself and pupils, and to the cause by refusing to fill such a position.

It is only through this persistent effort and display of moral courage on the part of home economics workers that School Boards will ever become educated on this point in question, and eventually make the basement laboratory a relic of the dark past.

JANE GOESSLING HAMMITT,
Wilmington, Delaware.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Household Engineering. By CHRISTINE FREDERICK. Chicago: The American School of Home Economics, 1919, pp. 527. \$1.75. By mail of the Journal, \$1.88. Text-book edition.

This volume includes not only everything given in Mrs. Frederick's earlier book, "The New Housekeeping," but also additional suggestions on efficient household management. The material is organized and arranged in twelve lessons and at the end of each lesson is a set of suggestive questions. At the end of the book is a fairly complete bibliography.

The book touches upon a wide range of household subjects and, as one would expect from the title, each phase of housekeeping is approached and dealt with from the standpoint of saving time, labor, and materials, or in the light of efficiency engineering.

Mrs. Frederick holds the attention by the contrasts she makes between old and new methods of work; for instance, she carries her point by comparing kitchens with very good and with very bad grouping of equipment; by presenting time schedules with and without order in dish-washing, with and without "change of shift" in cleaning, and with and without fireless cookers. Figures are also given to show the relation of the heights of individuals to the heights of working surfaces and lengths of handles.

The book is written in a vigorous style, is most suggestive, and ought to stimulate housekeepers so that they will be ready to try new methods of housekeeping so as to save time, labor, and materials.

SARAH J. MACLEOD
*Home Economics Bureau,
Society for Savings,
Cleveland, Ohio.*

Camp Cookery. By AVA B. MILAM, A. GRACE JOHNSON, and RUTH McNARY SMITH. Portland, Oregon: The J. K. Gill Co., 1918, pp. 108. \$.50. By mail of the Journal, \$.53.

While the days for camping are nearly over for this year, this little book on Camp Cookery has permanent value, and may be used for class work as well as "on the road." Its first evident advantage, particularly for camp use, is that it is so light in weight that it will not add appreciably to the burdens of the "pack."

The arrangement of the book is good, the recipes sensible, and the suggestions for camp diet good. The book is evidently intended for the more or less permanent camp. To those who are accustomed to camp for a few days, or to make walking trips without permanent headquarters, the equipment and meals seem somewhat elaborate.

The most difficult part of all for the camper, the proper management and control of the fire, might perhaps receive even more attention than it has.

While the book might well be supplemented by those referred to in the preface, and, for a list of very light equipment, by Stewart Edward White's "The Forest," this little volume has a distinct place of its own, and will do excellent service.

The Well Baby Primer, a pamphlet prepared by Dr. Caroline Hedger, is delightful both in its make-up, its attractive printing and its charming baby pictures. It was especially designed to be of service in the Americanization program to teach English to the foreign-born woman, and at the same time to educate her in American standards of baby health. Yet, though it is a primer,

every young mother not only would be interested in it but would be helped by its simple, plain, direct statements. Instruction in feeding, in weighing, in bathing, and dressing is written so plainly that all who run may read. The last page contains the

table of heights and weights of children furnished by the Children's Bureau. *Published by the Elisabeth McCormick Memorial Fund, 6 North Michigan Avenue, Chicago. Price, 15 cents.*

PAMPHLETS RECEIVED

Issued by the U. S. Department of Agriculture and Treasury Department:

Thrift Leaflets: No. 5, Saving Labor and Materials by Easier Laundry Methods; No. 6, How to Remove Stains; No. 7, Take Care of Your Clothing; No. 8, Saving Materials and Money by Special Cleaning; No. 9, Thrift in Lighting; No. 10, Thrift in the Choice, Use and Care of Kitchen Utensils; No. 11, Thrift in the Use of Fuel for Cooking; No. 12, Saving Fuel in Heating; No. 13, Saving Food by Proper Care; No. 14, Inexpensive Ways of Keeping Food Cool; No. 15, How Shall We Choose our Food? No. 16, The Weekly Market Basket; No. 17, Thrift on the Farm; No. 18, Business Methods for the Home; No. 19, Teaching Thrift to Your Children; No. 20, Thrift Standards for Boys and Girls.

Issued by the Iowa State College of Agriculture and Mechanical Arts:

Clothing Thrift. Emergency Leaflet No. 51, December, 1918.

Food for the Family. Home Economics Bulletin No. 10, March, 1919.

Short Cuts in Sewing. Janet G. Cation. Emergency Leaflet No. 53, May, 1919.

Steam Pressure Cooking for the Home. Nell M. Barnett and Elva V. Akin. Home Economics Circular No. 17, April, 1919.

Why Use Milk? Home Economics Circular No. 18, June, 1919.

Issued by the publishers listed:

Agencies for the Sale of Cooked Foods Without Profit. Iva Lowther Peters, Ph.D. Council of National Defense, Women's Committee.

Egg Substitutes and So-Called Egg Savers. Charles H. Lawall. Bulletin of the Pennsylvania Department of Agriculture, Vol. 1, No. 7.

Home Economics Education. Organization and Administration. Bulletin No. 28, Home Economics Series No. 2, Federal Board for Vocational Education.

Household Accounts. Marketing Series. March 1919, Bulletin 4, State Agricultural and Industrial League, Portland, Maine.

Household Budget Clubs. Velma Phillips, Tenth Series, No. 8, Teachers College Bulletin.

Malnutrition and Health Education. David Mitchell. Bureau of Educational Experiments, New York City.. Reprinted from The Pedagogical Seminary, March, 1919, Vol. XXVI, pp. 1-26.

Report of the Canada Food Board. 1918. Ottawa, Canada.

Report of the Committee on Dietary and Food Supplies. Charles S. Pitcher. Reprinted from *The State Hospital Quarterly.* February, 1919. State Hospitals Press, Utica, N. Y.

A Rural Social Survey of Orange Township, Blackhawk County, Iowa. Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa. Bulletin No. 184.

Sanitation of Swimming Pools. March, 1919 Bulletin of the California State Board of Health.

The Soldier-Citizen and His Home Town. Eda Amberg and William H. Allen. Educational Bureau, National War Work Council, Y. M. C. A.

Tuberculosis Survey Number. March, 1919, Bulletin, N. Y. State Department of Health.

War-time Changes in the Cost of Living. Research Report No. 14, February, 1919, National Industrial Conference Board, 15 Beacon Street, Boston, Mass.

NEWS FROM THE FIELD

Conference of Home Demonstration Agents, New Haven, Conn., April, 1919. At the opening session, each Home Demonstration Agent gave a five minute report on some project that she had developed particularly well or that was peculiar to her county or city.

Dorothy Buckley, Assistant State Leader gave a report of the intensive educational milk campaigns conducted in several cities of the state. Thousands of men, women, and children have been taught the various reasons why milk is such an important food.

Maud Hayes, Home Economics Specialist, reported on the twenty-four Institutes and Extension Schools, held the past session. The aim of these Institutes has been to link together the subjects of farm and home, the one being presented by a man, the other by a woman.

In presenting the Boys' and Girls' Club work, A. J. Brundage, State Club Leader, gave as its object "To Dignify Mother's and Father's Job." Speaking of the home and school as points of contact for club activities, he emphasized particularly the need of knowing community conditions. He urged that club workers gain the right conception of the boy's part in helping in the home.

Helen Bolan, Assistant Club Leader, showed how the Home Demonstration Agents could help with club work by acting as scouts, laying the foundation for clubs by interviewing interested persons, or by visiting certain schools.

M. Estella Sprague, State Home Demonstration Leader, outlined projects for the coming months: The state-wide campaign for preserving eggs, the milk campaigns, the question of ice shortage and consequent higher prices, and other means of food preservation. Efficiency surveys will be taken in about three hundred homes throughout

the state to determine how modern are the methods and equipment employed. Other projects to be developed are Household Accounting, Home Grown Products for Winter Supply, and Americanization Work.

At the afternoon session Gertrude Van Hoesen, States Relations Service, U. S. Department of Agriculture, Washington, D. C., talked on the Home Bureau from the standpoint of organization. She stated that such an organization should be built up on the basis of existing conditions; it must start at the bottom and grow with the needs of the community; it must use existing organizations. The paramount need for such an organization is evidenced by housing conditions, ignorance of foreigners, and wages below decent living. More than fifty per cent of the children in the United States are below par.

Winifred Gibbs, States Relations Service, Department of Agriculture, Washington, D. C., talked on The Housewife as a Financier. The cost of living is no longer a question of standards but a choice of values. By keeping household accounts a housewife will be able to make estimates and comparisons which will aid her in determining the amount necessary for a definite item, so that she will not be spending for one item at the expense of another, unknowingly.

Jessie Hoover, U. S. Department of Agriculture, Washington, D. C., talked on Home Problems of the Country Woman. The two problems, Labor and Social Isolation, were met, and one solution offered—To save labor by using convenient equipment so that more time for pleasure would result. A speedometer was used to prove how many steps could be saved by using labor saving devices.

I. G. Davis, Acting Director of Connecticut Extension Service, told of the Relation

of the Home Economics Department to other Departments of the Farm Bureau. The fundamental principles of the Farm Bureau are to maintain a high type of farmers on the farm, to demonstrate and develop the possibilities and attractiveness of farm life, to demonstrate farm life as a contrast to city life. To this end farm life must be on a profitable basis and there should be mutual interest of the producer and consumer.

Mrs. Samuel Russell, Jr., Chairman of the Home Economics Committee in Middlesex County, talked on the Relation of Local Committees to the Work of the Home Demonstration Agent.

Mrs. Frank Blakeman, representing the Home Economics Department of the Eastern Division of National Granges, sent, through Mrs. Wallace Mitchell, State Chairman, the message to the conference that the Home Economics Committees are being formed in the Granges throughout the state and coöperation with the Home Economics Department of the Extension Service is desired.

On Friday morning there were special sessions held for urban and rural workers, when each agent had the opportunity of getting help on any particular project from the specialist present.

Roy Jones of the Poultry Department, Connecticut Agricultural College, discussed the ways in which the Poultry and Home Economics Departments may work together. He stated that 50 per cent was saved in money by using waterglass, and also that half the supply of waterglass eggs should be used by Christmas time.

Walter Stemmons, of the Publicity Department of Connecticut Agricultural College, emphasized the importance of close coöperation of the Agents with the newspapers.

Mrs. Evelyn Tobey of Teachers' College, Columbia University, demonstrated the making of a child's hat with inexpensive materials, such as gingham, chambray, and cretonne.

Guy C. Smith and Hugh Bruce Price of the Bureau of Markets Department, Con-

necticut Agricultural College, and Mr. Stack of the New Haven Bureau of Markets presented the subject of marketing. Four cities in Connecticut, Hartford, New Haven, Bridgeport, and Waterbury, are putting out daily reports of the markets. Two reports are given, one for the producer and one for the consumer. These reports help the housewife to buy to advantage.

On Saturday morning the conference visited the Connecticut Agricultural Experiment Station. Miss Ferry of the Protein Research Department gave an illustrated lecture on Food Experimentation with White Rats. Dr. E. H. Jenkins, Director of the Experiment Station, personally conducted the visitors through the Station.

War Service Acknowledged. The JOURNAL has been asked to publish the following expression of appreciation for services rendered.

Upon their separation from the service, the Surgeon General directs us to express to all members of the Army Nurse Corps, both regular and reserve, and to all dietitians, reconstruction aides, laboratory technicians, medical secretaries, and other women civilians who have rendered such valiant service with the Medical Department of the Army, his personal appreciation and that of the Department for their patriotic devotion to duty and the self-sacrificing spirit they have manifested in giving their assistance to the Department and the Army when it was so badly needed.

He regrets that it has not been possible to accept all the offers of renewed and continued service because of the great reduction of the Department personnel, and he hopes that all who can will continue their connection with the Department through their membership in the American Red Cross.

JULIA C. STIMSON,
*Acting Superintendent,
Army Nurse Corps
and Dean, Army
School of Nursing.*

LENNA F. COOPER,
Supervising Dietitian.

THE Journal of Home Economics

VOL. XI

NOVEMBER, 1919

No. 11

NUTRITION CLASSES FOR CHILDREN¹

MARY A. HARPER

New York Association for Improving the Condition of the Poor

For the last twelve years the New York Association for Improving the Condition of the Poor has had on its staff trained home economics workers. It was the first organization dealing with relief and health problems to provide trained dietitians for work with the individual family. This was the beginning of an appreciation on its part of the fact that nutritional problems are fundamental in relief and public health problems, and that, in order to make constructive work with families possible, intensive and well-informed attention must be given to the nutrition of the individuals of those families.

In the development of its work during these years the Association has realized increasingly that preventive health work is preventive relief work. It has perceived, for example, that to prevent tuberculosis, which causes at least one half of its relief problem, it must address itself not so much to the requirements of the tuberculosis patient as to the problem of insuring healthy babies and healthy normal physical specimens of boys and girls. It has therefore been putting emphasis upon the prenatal education and upon efforts to give every child its birthright—to be born well. Its prenatal program, with its program for instruction of the mother in feeding the young infant antedated the milk station. In addition to the emphasis upon this problem it has also addressed itself to discovering defects in children, and to providing facilities for dealing with these defects when discovered.

¹ Presented at the Twelfth Annual Meeting of the American Home Economics Association, Blue Ridge, N. C., June, 1919.

To further promote this health education program the Association has developed an intensive demonstration in a definite district in New York City comprising some 38 blocks with some 38,000 people, 91 per cent of whom are Italian born, or children of Italian born. By assigning a corps of prenatal nurses and dietitians to work exclusively in this district it is maintaining an experimental and demonstration center showing the possibilities of dealing practically with the whole range of the child defect problem.

As the prenatal nurses visited these homes, in addition to securing the mother's interest in the prenatal work and the problem of the feeding of the young infant, they secured her interest in the physical condition of the other children in the family. They persuaded her to have them examined, weighed, and as fast as defects were discovered they addressed themselves intensively to securing the removal of those defects. The defects included nose and throat defects, teeth defects, eye defects, and all other defects to which childhood is prone. Prominent among these was defective nutrition. The dietitian therefore began to work with the nurses, taking as her special problem the care of the undernourished child.

In looking over the work done on this problem, we found that generally the child from two to six years was receiving very little attention. The Baby Health Stations and other agencies were caring for the child from birth to two years. Methods for caring for the undernourished school child were being developed. In beginning our experiment therefore we made use of the things which were already tangible and from them worked towards the intangible, and, although the greater part of this paper is given to discussing the work with the children of school age, this is not the main part of our problem; we have been feeling our way towards what we think is really preventive nutritional work for children, namely the care of the pre-school child.

We have been able to make progress in this, especially in the last few months. We do the work entirely in the home, the instruction being given through the mother. Our dietitians carry a portable weighing machine, and visit as they weigh the children right in the homes. This removes the great difficulty of getting the mother to bring the children somewhere to get them weighed. A small weight chart is kept for each child so that the mother will see whether the curve is going up or down, and the dietitian explains to the mother why these changes take place. We shall speak of the home instruction and the methods we use later.

As you all know, Dr. Emerson of the Massachusetts General Hospital, Boston, is the originator of the nutrition class, a system which for a number of years has proved its worth in dealing with the undernourished child of school age. In New York City a number of nutrition classes were already established in several hospitals, Bowling Green Health Centre, and Public School 64. These classes were under direct supervision of physicians. The class at Public School 64 was carried on by the Bureau of Educational Experiments under direction of Dr. Emerson himself. These classes were dealing with the problem from the medical end and the doctor's assistants were usually not trained home economics workers. There was some home visiting done but the greater part of the work was centered in the class itself. Miss Lucy H. Gillett, now Director of the Dietetic Bureau, Boston, who was in charge of the Home Economics Department of the A. I. C. P. at the beginning of the experiment, saw a big field for trained nutrition workers to conduct nutrition classes as well as to do intensive work in the homes.

A year ago the first nutrition class was held. The children were from the homes where the prenatal nurse had already made the first contact. We had a class of eight children. The interest of the children was secured very readily and they not only returned themselves but brought pale friends from next door, pale friends from upstairs, and skinny friends from the rear house. The nurses were also referring more children to the dietitian and after a few weeks two more classes were organized. By the time schools were re-opened in the fall we had enrolled over 200 children. Since these children were school children and since the school seemed the logical place for such classes, our next step was to take the records of the summer's work to the schools. The weight charts and other records proved that constructive work was being accomplished and we were invited to organize classes in the schools. In one school a class was organized for 25 children with whom we had worked during the summer. The class was held in the school indoor playground after school hours on Friday, at zero hour we might say, but by the end of the two months the school principals were becoming really interested and the teachers were beginning to refer children as applicants for the nutrition class. It was more than encouraging to have a sickly child come to you with a note from the principal saying: "A new recruit, a promised oatmeal eater." At last in February of this year we were given permission to handle the children by grades, weighing and measuring the whole grade and selecting the children for the nutrition class. The classes are held out of school hours.

Let us look at the problems we had to consider in planning a system that would meet the needs of the children and families with whom we were dealing.

Those of us who do dietetic work in the homes find that to secure the best results of instruction we must find some way of interesting *both* the mother and the children. If we confine our instructions to the mother alone, even though we get her interested enough to change her methods of selecting and cooking food, the children very often refuse to eat the things she prepares because they mean nothing to them. Our own mothers would say that that is not an argument, but may we not say that the children of today are not inclined as the children of yesterday?

Again those of us who teach in schools find that when we can reach the mother as well as the child, more constructive work can be accomplished. When we can see the homes where the children live and get to really know the family and have the family become acquainted with us, then we have a better starting point for our instruction.

It seemed therefore that we could best meet our problem in improving the general health of the undernourished child by devising a plan by which we could make it a matter of personal interest to the child whether he continued in bad food habits or followed our instruction in better habits, and at the same time make it a matter of personal interest to the mother and have her feel that we were depending on her to help us in our efforts.

The preliminary steps in organizing a nutrition class are the weighing and measuring of the children, followed by a thorough medical examination. Some classes admit only children who are over 7 per cent underweight but we felt by the impression gathered from visits to the homes that there were many children who, though only 2 per cent underweight, would soon be over 7 per cent underweight were they to continue living in the existing home conditions. We therefore admit to our classes all children underweight and even children of normal weight if their physical condition and their home conditions are in need of our care. It is interesting to know how much faith we can put in actual appearances in judging whether a child is underweight. In one school our dietitian selected from several grades the children who seemed to be underweight. Then she weighed and measured the whole grades. The results showed that many of the children selected were not underweight and many that seemed normal weight were really very much underweight. In another school the teachers were asked to select from their classes the

underweight children. One hundred and thirty-five children were selected but when these were weighed and measured it was found that only 94 were underweight, while 38 were overweight.

When the children have been weighed and measured and the underweight ones medically examined, the next step is to have the medical defects removed. The nurse takes care of this; she sees that the doctor's instructions are carried out, as far as possible and as soon as possible. Anyone who has done this kind of work appreciates what is included in the "as far as possible" and the "as soon as possible." Of course the ideal way would be to have all defects corrected before admitting a child to the nutrition class, but we know, and social workers especially know, that ideals are one thing and actual conditions are another. We therefore remove all the defects we can and for those that we cannot we plan our instruction so that the children will see for themselves whether our recommendations are advantageous or not. If the boy next door has his tonsils removed and afterwards gains weight, that weight curve alone is of more value than hours of explanation to Tony, who has still enlarged tonsils, and to Tony's mother.

In the selection for a place for a nutrition class we read about finding a cool quiet room. We all agree that this is very desirable indeed but it is not always possible. We must confess that in our beginnings we found neither rooms nor anything else that were particularly cool and quiet. I do not think we differed from other pioneers in this respect. We took what we could get, made the best of them, and aimed towards securing more satisfactory conditions. Our first class was held in a small milk station, the children were weighed on the scales used for weighing the babies. Now, however, we have accommodations in the schools that are very satisfactory.

At the nutrition class the children are weighed once a week. The weekly weighings are recorded on large charts. The red line indicates the normal weight for height and the gain in this line is calculated according to the expected gain for a child of that age and sex. This brings in both factors of height and age. Colored stars are awarded for certain habits: the red star means no tea, no coffee; the blue star, cereal every morning; the green star, early bedtime; the silver star, clean teeth; the gold star the highest gain in the class for the week. How do we know that the children merit those stars? In answer let us say that far be it from us to assert that those stars represent the truth, the whole truth, and nothing but the truth. This is the way we secure our information

for awarding them and as we find more accurate methods we shall use them. We have the children keep a record of the time they get up, the time they eat each meal and what they eat and the time they go to bed. At first the children made this a daily record but we found that the enthusiastic ones would acquire nine and sometimes ten days for a week and that children in the same tenement and in the same school grade showed a marked similarity in their diet. So we changed the plan to a record of two consecutive days a week, changing these days every week and trying to visit the homes on these days to see what was in the home and hear what the mother had to say. We feel that if a child is sufficiently interested to write down what he eats and when he eats, just the fact that he does this leaves some impression on his mind that what he eats and when he eats is in some way connected with how he feels. Dr. Emerson's system is also to record the food for two consecutive days. He has a special record book which is kept by the mother or the visitor from the clinic. In this book are given standards for judging 100 calorie portions, and the day's food is summed up in calories. The mothers we are working with cannot write, and then, too, the varied assortment of dishes in the homes makes us hesitate at cups and calories and the slices of bread we see rather baffle mathematical calculation.

At the class the weight charts are hung up and each child sees who has gained and who has lost and we discuss the reasons for the directions of the curves.

Let us next look at the work with the mothers in the homes. Dr. Cabot, in his recent book on Social Work, says that he cannot emphasize sufficiently the great value of home visiting. He tells of the invaluable help given physicians by the social service visitors of hospitals. They economize the physician's time, throw new light on his diagnosis and enable him to consider his patient from an entirely different point of view than he could ever have got from merely a clinical interview.

When we make a suggestion to the child at the class about a certain change in diet we visit the mother and give her the same suggestion. In the home we get a truer opinion of why the child is undernourished, and therefore can offer suggestions that are more to the point than general class instruction. We try to avoid all negative methods of teaching; instead of saying "don't drink tea and coffee" we say "try cocoa and see if you don't feel better and gain weight." We try to make the better foods attractive enough so that they will fight their own battles against the bad ones. When the mother, in spite of every

The above chart represents a typical weight chart showing the stars awarded for better habits.

The above chart represents the weight curves of three sisters for the same period, 19 weeks.

| | AGE | UNDERWEIGHT AT ADMISSION | EXPECTED GAIN | ACTUAL GAIN |
|---|--------------|-----------------------------|---------------|---------------|
| | <i>years</i> | <i>pounds</i> | <i>pounds</i> | <i>pounds</i> |
| 1 | 10 | 7½ | 1.79 | ■ |
| 2 | 14 | 2½ | 3.65 | 8½ |
| 3 | 8 | 7 | 1.56 | 2 |

The three sisters had enlarged tonsils; 1 and 2 had theirs removed; 3 did not until the date shown on the chart. The three sisters received the same care and instruction during this period.

persuasion, refuses to try different foods we try to show her a better way of cooking what she is already using; if that fails we try to discover what it is we can interest her in, even though it is something entirely apart from our usual procedure, and in that way make our beginning by following the line of least resistance. In dealing with these Italian families we take the best of the customs and habits they brought with them to this country, we encourage them in the use of these and only suggest changes necessary for the health of children. One woman said to a dietitian "You know what's best, but we know what's good." That dietitian's problem was to find a happy medium between the best for taste and the good for health, and while doing so to step softly.

The dietetic problems with which we are confronted in Italian districts are many and varied. Perhaps the biggest is the irregularity of meals—the children eat all things at all times. Indeed it seems to be the mother's greatest ambition to say that her baby can eat everything that the grown-up folks eat. The children's usual breakfast is coffee and bread. Green vegetables are used very frequently and fresh fruits also, but it is difficult to instill the doctrine of dried fruits. Bread is used in abundance. Rice and some cornmeal are the only cereals in common use and these never as a breakfast food. In the use of milk the Board of Health Milk Stations and other health agencies have accomplished much. Meat is served not more than three or four times a week. Then there are the dishes cooked in oil and the macaroni and spaghetti.

We have been fairly successful in substituting milk and cocoa for tea and coffee. The breakfast cereal is our most difficult problem. There is the old plea of too much time, too much gas. Last Christmas we gave the children double boilers as Christmas prizes and in this way added a considerable number of cereal converts to our list, since we started speaking about double boilers early in November. One woman refused to use her double boiler and it was a long time before we discovered the reason. She was keeping it new and clean until she went back to Italy after the war. We emphasize strongly the use of milk as a drink, but when the children dislike it in this form we show the mother how to make dishes which include milk and in this way get to the children the amount of milk they need.

Whatever changes in the diet we suggest, we demonstrate the preparation to the mother in the home, on her own stove and using her own utensils. When we demonstrate we ask the woman to invite the neigh-

bors to come in, and in that way we are building up small classes in the homes, and reaching many families we could not otherwise reach. Sometimes at these demonstrations we show the children's weight charts.

Perhaps, as you have listened to the story of this work as I have tried to present it, the questions arise—what happens to the child when he attains normal weight and is discharged from the class and what happens in the home when the visits are discontinued? In answer to the first question we have been fortunate to find that the children have been sufficiently interested so that they come back of their own accord from time to time and ask to be weighed again. In one instance a boy attained normal weight and was discharged from the class. Several weeks later visits to the home were also discontinued. Three months after this the mother came to the dietitian and told her how the boy had fallen and hurt himself and been quite sick and during his convalescence had refused to eat cereals for breakfast; she added pleadingly: "Won't you please come in and holler at him." Where it is possible we try to leave in the home, or in the tenement where the home is, some one who will remind the family of our efforts and carry on what we have started.

Our work is still in a very experimental stage and as the school year is not yet ended we have not the figures for the actual gains of the children compiled. But the weight charts show that the gains are considerably above the expected gains. The school principals and teachers report that the improvement in the physical condition of the children is reflected in their work in the class room.

We feel very strongly that the work in the homes is the means of getting down to the root of our problem. We get to know the families and the families get to know us, which is just as important. When social workers can get away from the idea that they are visiting the homes in the rôle of a critic or a detective and realize the importance and worth of genuinely liking the persons they are trying to help, they can accomplish bigger things.

The successful nutrition worker in the homes has to be a very resourceful person. Her success lies not in her ability to plan a course of study and carry it out, for it is seldom she ever does what she plans. Her success is in her ability not to be surprised or disappointed, to put so much thought into her work that she considers ahead of time a plan for any emergency, and in her power to meet the emergency when

it arises. Much of the success of our work has been due to the good understanding and coöperation between the nurses and dietitians. We have worked together. The dietitians learn much from the nurses. The nurses consult with the dietitian regarding the dietetic problems of the families and very often carry suggestions relieving the dietitian from the need to continue her visits. In this way the dietitian's time is economized for work with more special nutrition problems.

The whole purpose of our nutrition work is to carry on the foundation already laid by the pre-natal work and the Baby Health Stations which care for the child from birth to two years. We are trying to give the child a chance to start life with a healthy body and to provide him with a workable knowledge of how to keep himself well and healthy—to start him with a better outlook on life.

A METHOD OF DETERMINING THE DECOMPOSITION POINT OF EDIBLE FATS

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The difficulty of determining accurately the temperature at which the decomposition of fats occurs on heating, by observing the formation of visible fumes, led to a search for a more exact method, which resulted in the one to be described in this paper. It is based upon the delicate fuchsin test for aldehydes, since the decomposition product (acrolein) in which we are most interested belongs to this class of compounds.

The reagent, fuchsin bi-sulphite. The reagent is prepared by dissolving 0.2 gram of rosanilin in 10 cc. of a freshly prepared, cold, saturated aqueous solution of sulphur dioxide. The solution is allowed to stand until all signs of pink disappear and it becomes colorless or a pale yellow. It is diluted with water to 200 cc. and preserved for use in a closely stoppered bottle.

In using, 0.05 gram or one drop of the substance to be tested is added to 5 cc. of the solution. The appearance, after two minutes, of a distinct pink, red, purple, or blue coloration indicates the presence of an aldehyde.

The test to be of value must be applied under carefully regulated conditions. The reagent is reddened by alkalis, by heating, or by long exposure to air at ordinary temperatures.

The method. Having found a suitable reagent, the problem was simply one of bringing the fumes into contact with it. A test paper held in the fumes was first tried. This was unsatisfactory because the paper was reddened merely by the heat. A method was finally devised whereby the fumes from the heating fat could be drawn through a U-tube containing the reagent.

The apparatus. The first apparatus used consisted of a wide mouthed flask, having a capacity of 125 cc. and a diameter of $2\frac{1}{2}$ inches, which was fitted with a cork carrying (1) a thermometer, (2) a capillary tube to admit air above the surface of the fat, and (3) a bent delivery tube. The delivery tube was connected with the U-tube holding the reagent and the latter with a small filter pump. The latter was adjusted so that air and fumes from above the fat were drawn through the U-tube at a constant but not a rapid rate, so that the bubbles passed slowly through the reagent. The slightest color in the U-tube was regarded as the end point.

It was observed presently that the heat of the room was affecting the reagent. The apparatus was then modified by removing the U-tube to a greater distance from the flame and immersing it in a beaker of chopped ice.

A further modification was necessary in order to heat the fat under more normal conditions in open vessels. Hoods were devised to fit different sized vessels (evaporating dishes, iron frying pans) by cutting the stems from funnels of suitable size and fitting the opening left with corks carrying the tubes, and thermometer. The method of aspirating by means of the filter pump worked quite as well with these arrangements as with the small flask.

Application of method. Observations were made on six common fats; Wesson's oil, mazola, olive oil, crisco, lard compound, and rendered leaf lard. These fats were heated in each of the following, (1) $2\frac{1}{2}$ inch flask, (2) $3\frac{1}{2}$ inch evaporating dish, (3) 6 inch frying pan. The heat was applied so that the rise of temperature was continuous. The results are given in the first part of the following table. Since the action of the reagent is somewhat slow, it seemed possible that an error might be introduced on this account. Therefore samples of the same fats were heated in the same manner except that the heat was applied in such a

ILLUSTRATION OF THE METHODS USED

Method I, glass flask; II, evaporating dish; III, frying pan. *A*, thermometer; *B*, funnel; *C*, Bunsen burner; *D*, delivery tube; *E*, U-tube containing fuchsin bisulphite; *F*, tube connected to filter pump; *G*, beaker containing ice water.

way that the temperature was held at each interval of 5°, beginning at 150°C.¹, for ten minutes. Under these conditions the decomposition point was found to be very much lower than by the first method. Wesson's oil (cottonseed) which on continuous heating gave the test at 238° in the 2½ inch flask, at 235° in the 3½ inch evaporating dish, and at 222° in the 6 inch frying pan, gave, by holding at 5° intervals for ten minutes, the same test at 210°, 210°, and 205° in the different vessels (part 2 of table 1). Similar differences were observed in the case of each fat.

TABLE 1

Results obtained by using fuchsin bisulphite as a test for acrolein

| KIND OF FAT | CONTINUOUS RISE | | | GRADUAL RISE OF 5° AT INTERVALS OF 10 MINUTES | | |
|----------------------|---------------------------|--------------------------------------|-------------------------------|---|--------------------------------------|-------------------------------|
| | Flask, diameter 2½ inches | Evaporating dish, diameter 3½ inches | Frying pan, diameter 6 inches | Flask, diameter 2½ inches | Evaporating dish, diameter 3½ inches | Frying pan, diameter 6 inches |
| | degrees C. | degrees C. | degrees C. | degrees C. | degrees C. | degrees C. |
| 1. Wesson Oil | 235 | 235 | 223 | | | |
| | 240 | 234 | 221 | 205-210 | 205-210 | 200-205 |
| Average | 238 | 235 | 222 | | | |
| 2. Mazola (corn oil) | 230 | 231 | 220 | | | |
| | 235 | 229 | 216 | 200-205 | 200-205 | 195-200 |
| Average | 233 | 230 | 218 | | | |
| 3. Olive oil | 185 | 179 | 168 | | | |
| | 178 | 177 | 166 | 165-170 | 165-170 | 160-165 |
| Average | 182 | 178 | 167 | | | |
| 4. Crisco | 234 | 232 | 221 | | | |
| | 231 | 230 | 218 | 200-205 | 200-205 | 195-200 |
| Average | 233 | 231 | 219 | | | |
| 5. Lard Compound | 228 | 227 | 216 | | | |
| | 232 | 226 | 212 | 195-200 | 195-200 | 190-195 |
| Average | 230 | 226 | 214 | | | |
| 6. Leaf lard | 225 | 222 | 210 | | | |
| | 222 | 220 | 209 | 190-195 | 190-195 | 185-190 |
| Average | 223 | 221 | 210 | | | |

Duplicate experiments have confirmed these results, which agree with those of Blunt and Feeney² on smoking temperatures, showing that the

¹ All temperatures referred to are Centigrade.

² The Smoking Temperatures of Edible Fats. Katherine Blunt and Clara M. Feeney, *Jour. Home Econ.*, 7 (1915), pp. 535-541.

greater the surface exposed the lower will be the temperature at which acrolein is formed. In order to eliminate the possible error due to the character of the container, fats were heated in a $7\frac{1}{2}$ inch evaporating dish and also in the same size iron frying pan. There was practically no difference in results. The acidity of the samples was not determined but all portions of the different fats tested were from the same sample.

This method seems to give very satisfactory results and offers evidence that the decomposition point of all fats is much lower than we have been accustomed to believe. Our results have emphasized the importance of the use of as low a temperature as possible in deep fat frying. In a series of experiments in making potato chips, lattice potatoes, and Julienne potatoes, we have found that the best results were obtained at 170° to 175° for potato chips, at 160° to 165° for lattice potatoes and Julienne. These temperatures gave products which were evenly and delicately browned, delicious in flavor, and retained their crispness even when cold. In no case was there a strong flavor of decomposed fat.

When the temperature was kept low, reheating seemed to have little effect upon the quality of the fat for cooking purposes. A lot of crisco was reheated thirty times, 100 grams of potatoes cooked in it each time and at the end it was merely a little creamy when cold. There was no evidence of "scorching." In another case a kettle of 5 pounds of fat was reheated eight times, and during the process $25\frac{1}{2}$ pounds of potato chips (raw) were fried. The remaining fat was still very light colored. In both cases the fat had been heated to 185° but the temperature was reduced to the proper point by the addition of the potatoes.

PUTTING OVER BUDGET LESSONS

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During the past year, the writer has had occasion to confer with three hundred and fifty home economics teachers. When she has asked the question, "Do you teach the Clothing Budget?" she usually has received

one of two answers: "I expect to if our sewing is done in time," or "This is only a one-year course so we cannot include it."

Account keeping should be included in the first year's home economics course, for a girl may not have a second year. Girls should keep their personal accounts all through the year so that they may have a foundation for budget study, if it is desirable to put this at the end of the year. A study of the budget should be the foundation upon which the clothing course is built. The home economics teacher who is failing to show the girls the many ways in which they can keep down clothing expenses is missing a great opportunity.

The following summary of eight lessons, taught by the writer at a Farm Camp,¹ is reproduced to show one way in which clothing lessons may be linked up with budget work.

BUDGET LESSONS AT THE CLARINDA FARM CAMP

Twenty-six girls were enrolled, ranging in age from fourteen to eighteen years. Most of them attended town or consolidated school; all but one had had at least one year of home economics; not one had ever had any budget work.

The first day they were asked to answer these questions:

1. Do you know how much your clothes cost last year? One girl knew, 25 did not know.

2. How much do you think your clothes cost? The answers were as follows: 3 thought \$20-\$40, 5 thought \$50, 5 thought \$60-\$80, 4 thought \$80-100, 4 thought \$100, 3 thought \$150, 3 thought \$200.

3. Do you have an allowance? Six did, 20 did not.

4. To what extent do you select your own clothing? Two selected all of their clothing; all helped select it, really deciding for the most part what they would buy, and selecting patterns for garments made at home. As best they could they figured what their clothing cost for last year; the lowest cost was \$95; the highest, \$250. The figures were, of course, not accurate, for since the girls were away from home they could write only what they remembered. All of them found many superfluous things in their wardrobes that they will try to avoid next year.

Together they worked out the following budget as suitable for a school girl living in the country or small town:

¹ Held in connection with the Chautauqua of Clarinda, Iowa.

CLOTHING BUDGET

| KIND OF GARMENT | COST | NUMBER OF YEARS | AVERAGE |
|---|---------|-----------------|---------|
| <i>Outergarments</i> | | | |
| Winter coat..... | \$16.00 | 2 | \$8.00 |
| Sweater..... | 8.00 | 2 | 4.00 |
| Cape (made at home)..... | 7.00 | 2 | 3.50 |
| Rain coat..... | 6.00 | 4 | 1.50 |
| School dress (made at home)..... | 8.00 | 2 | 4.00 |
| Best dress (wool or silk)..... | 11.50 | 2 | 5.75 |
| 1 wool skirt..... | 5.00 | 2 | 2.50 |
| 1 flannel middy..... | 5.00 | 2 | 2.50 |
| 1 white skirt..... | 2.50 | 2 | 1.25 |
| 1 middy (2 left over)..... | 2.00 | 1 | 2.00 |
| 1 gingham dress (made at home)..... | 3.00 | 1 | 3.00 |
| 1 percale dress (made at home)..... | 2.00 | 1 | 2.00 |
| 1 voile dress (made at home; worn as best dress even to parties)..... | 5.00 | 1 | 5.00 |
| 2 bungalow aprons..... | 3.00 | 1 | 3.00 |
| Total..... | | | \$48.00 |
| <i>Undergarments</i> | | | |
| 3 union suits @ \$2.00..... | 6.00 | 2 | 3.00 |
| 3 gauze vests @ 50¢..... | 1.50 | 2 | .75 |
| 3 "teddies" (made at home) @ 75¢..... | 2.25 | 1 | 2.25 |
| 2 outing gowns @ \$1.50..... | 3.00 | 3 | 1.00 |
| 2 muslin gowns @ \$1.00..... | 2.00 | 2 | 1.00 |
| 1 white petticoat..... | 2.00 | 2 | 1.00 |
| 1 gingham petticoat (made from old gingham dresses)..... | | | |
| 1 winter petticoat (sateen)..... | 1.50 | 1 | 1.50 |
| 1 pair gym bloomers..... | 4.00 | 4 | 1.00 |
| Kimona..... | 2.50 | 2 | 1.25 |
| 2 corsets @ \$2.00..... | 4.00 | 1 | 4.00 |
| Total..... | | | \$16.75 |
| <i>Hats and Gloves</i> | | | |
| 1 winter hat..... | 4.00 | 2 | 2.00 |
| 1 summer hat..... | 5.00 | 2 | 2.50 |
| 1 tam..... | 2.00 | 3 | .67 |
| 1 pair mittens..... | .50 | 1 | .50 |
| Total..... | | | \$5.67 |

Shoes and stockings

| | | | |
|------------------------------------|-------|---|---------|
| 2 pairs school shoes @ \$6.00..... | 12.00 | 1 | 12.00 |
| 1 pair rubbers..... | 1.00 | 1 | 1.00 |
| 1 pair low black shoes..... | 6.50 | 2 | 3.25 |
| 1 pair low white shoes..... | 4.00 | 2 | 2.00 |
| 6 pairs cotton stockings..... | 3.00 | 1 | 3.00 |
| 2 pairs silk stockings..... | 3.00 | 1 | 3.00 |
| Shoe repairs..... | 5.00 | 1 | 5.00 |
| Total..... | | | \$29.25 |

Miscellaneous

| | | | |
|------------------------------------|------|---|--------|
| 1 middy tie..... | .75 | 1 | .75 |
| 3 ribbons..... | 3.00 | 1 | 3.00 |
| Hair pins and toilet articles..... | 2.50 | 1 | 2.50 |
| Handkerchiefs..... | 2.00 | 1 | 2.00 |
| Total..... | | | \$8.25 |

Summary

| | TOTALS | APPROXIMATE PER CENT |
|--------------------------|----------|-------------------------|
| Outergarments..... | \$48.00 | 45 |
| Undergarments..... | 16.75 | 15 |
| Hats and gloves..... | 5.67 | 5 |
| Shoes and stockings..... | 29.25 | 27 |
| Miscellaneous..... | 8.25 | 8 |
| Total..... | \$107.92 | 100 |

The other five lessons were given over to ways of keeping down the clothing expense, notwithstanding high prices. The girls were taught to make a bunch of yarn flowers for their fall hats. The materials cost only a quarter for flowers which sold for two dollars in the stores. The girls were especially delighted when they discovered that the town milliner was wearing a new fall hat trimmed with the same kind of flowers. One lesson was spent in making several inexpensive dress finishes. On the last day, the subject was "Prolonging the life of clothing by taking the best possible care of it." A wool dress, which had been put away dirty and with the pocket torn, was mended and cleaned. Grease spots and ink stains were taken out of other garments. Two shoes, one with a toe plate, the other without, were compared. The comparison of the dress hung over a hook and the one put away on a hanger told its own story.

HOUSEHOLD ARTS AND THE HIGH SCHOOL GIRL

WHAT OUR GIRLS HAVE A RIGHT TO RECEIVE FROM A TWO YEAR
HIGH SCHOOL COURSE IN HOUSEHOLD ARTS, AND HOW THEIR
INTEREST IN THE SUBJECT MAY BE STIMULATED

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Let us start with the premise that over 90 per cent of our girls will be in their own homes within a few years. That whatever they may do for the four to ten years after leaving school, the end of that time will find them administering the affairs of a home. This means planning, buying, and from now on will doubtless mean doing a great deal of actual work on account of the scarcity of help. What shall we teach them that will aid them the most when these tasks fall upon their unaccustomed shoulders?

One of the important problems will be that of buying, and to meet it ample training in textile shopping should be given. For every garment, there should be thoroughly taught a list of suitable materials, with standard prices, special qualities, and the amount needed to make the garment. Drill upon this until it is as familiar as the girl's own name. Follow this up by a study of the essentials of house furnishing. Let lists be made of all textile articles used in the bedroom; show as many samples as possible, ascertain prices, draw out comparisons. Have the pupils plan the furnishings for an ideal bedroom, taking into consideration prices and durability, position and exposure of room, as well as personal taste. Then have the expenditures cut down, leaving out superfluities, and weighing the value of various economies, until the girls have, as a foundation for bedroom furnishing, a list of the bare necessities, with a clear idea of where money can be saved and when it is wise to spend freely,—the wisdom, for instance, of selecting good blankets which will last a life time, and spending less upon curtains and draperies, that are transient things.

Let this be followed up with the living room, dining room, and kitchen. Let the girls handle samples, ask questions, compare lists, and take notes. A tiny memorandum book will keep in a small space all the data they want, and they will like to write it up and refer to it in the class discussions on the wise spending of money.

Brief drills are most valuable at this point, with the use of an outline which calls for a textile article for a certain type of room, two or three fabrics that are usable for the purpose, with the width, price, and special suitability of each. Quick recitations fix the points in the mind as nothing else will do except actual buying, and that is not always possible.

Half yard lengths of carpeting—Body Brussels, Wilton, Axminster, Tapestry Brussels, and Ingrain,—will interest the pupils and give them a starting point for some knowledge of floor coverings. They will become fascinated with the study of oriental rugs, if this is presented to them from the broad standpoint of materials, colors, designs, shapes, uses, and values.

Table linen is another subject they thoroughly enjoy. They should know why flax is so scarce now, when we may hope to have an abundant supply again, what substitutes are in the market, and how to make the most of the linen we still have. Samples of sufficient size to be easily handled and compared are essential. These must, of course, be bought, as must the samples of carpeting, but it is money well spent and part of a textile teacher's equipment, and when a stock is secured it lasts for years. Samples of woolen, cotton, and silk materials can generally be procured without buying, and pictures illustrating all processes of production can be found in magazines and advertisements just for the slight trouble of keeping one's eyes open.

All this instruction takes surprisingly little school time. A few minutes of presentation, discussion of samples, and directions for outside work, and the subject is well underway. Short snappy drills and reviews take but a brief time and while the girls are sewing they are exchanging opinions and information on textiles, instead of gossiping about the last party. The teacher's knowledge, interest, and pleasure in the subject makes its enthusiastic reception by the pupils a very certain thing.

A limited amount of costume design should be given. Using the current fashion magazines, select costumes which show grace and strength, and also those that are poor in line or decoration. A very little stress upon this will open the eyes of the pupils to the principles of good line, and start them on the road to a better choice of patterns. A costume becoming to a medium figure can be altered to suit very slight and extremely heavy persons without losing the basic plan of the design.

The girls will enjoy a little color work, making combinations of harmonies and contrasts, suiting colors to different complexions, eyes, and

hair. Large pieces of inexpensive materials, in good shades, are valuable for this, as they can be draped about the shoulders of different pupils, and the effect noted. They will readily see the desirability of considering the personality, as well as the complexion, and that the texture of material is almost as important as the shade.

Every point of contact should be utilized—the art of design, the chemistry of dyeing and printing, the industrial life of the textile workers, the hygiene of the fibres, the sheer joy in pretty materials and lovely colors. Let us use all these, so that a piece of azure or orchid silk will not mean only dress goods at so much per yard, but will suggest mulberry trees, Japanese or Italian girls at their careful task of rearing silk-worms, the aid of the dye chemist, the skill of the weaver, and the pleasure of the artist in a beautiful fabric and a satisfying color.

As to the actual sewing instruction, most girls have some foundation of technical knowledge by the time high school is reached, but we must begin as though they had none, giving definite instructions and requiring demonstrations of the simplest processes, and at once selecting and listing for special help the ones who cannot follow directions. Give public recognition to those who do well, and let them act as helpers and instructors to the weaker ones. A girl who sews badly, placed by one who sews well, absorbs much indirect help just by observation and example, and is stimulated to succeed so that she may share in the praise her seat mate is receiving. Our tendency has been to accept good work as a matter of course, concentrating our efforts on criticism of poor work, but experience shows us that a reversal of method saves much friction and preserves pleasanter relations between class and instructor.

Keep good work before them, have well made models which they can inspect as often as they wish, and thus form in their minds ideals of proper technique. Of course the day of model books has passed, but it is certainly wise to let a pupil try a new seam on a scrap of cloth, and have it inspected, corrected, and approved before she uses it on a garment. If she can make two inches of a good fell or hem, she can make an indefinite number of inches if she cares to, and when she knows that she will receive public mention as soon as she attains a certain degree of proficiency, she will undoubtedly do her best.

Ripping out work should be reduced to the minimum, as it discourages the pupil and injures the cloth. Of course there is occasionally an absolute necessity for ripping, but a little foresight, and the right spirit

in the class will reduce it wonderfully. Let us use a positive suggestion, not saying, "Now girls, if you sew carelessly, you will have to rip out your work," but instead something of this order,—“It is very unpleasant to have to rip out work, it takes time that you might be putting into another garment, and it spoils your material. Let us prevent it. Bring your work to me very often. Show me every basted seam before you stitch it. Try your machine on a scrap of cloth before you sew on your garment, and let us finish this set of waists, (or whatever the model may be) without a single girl having to rip a stitch of machine sewing.” Then if it is done, and it often is, celebrate the event. Write upon the board for the other classes to see that class 1-13, 3rd hr., made a set of thirty-five waists without a single girl having to rip her work. Of course we often accept poor sewing, but if we do not expect perfect work when we teach writing, English, or mathematics, why should we expect it here? The girl who does a bad piece of seam work may be extra good in careful, economical cutting, or in wise shopping. Shall she be prevented from going on to the next garment because she has not yet gained the skill of hand to make a perfect seam? Will she not overcome her difficulties more rapidly if she is allowed to finish the first garment and make a second one, than if she spends time in discouraged ripping?

One danger in our sewing classes is that we shall work too slowly. Speed is one of the essentials of modern life, and we do our pupils an injustice if we permit them to dawdle, dilly dally, or even spend too much time in careful fussy detail. It is better that they should work with reasonable speed even if the results are not so good in the beginning, and then improve in technique through repetition. The making of two garments, the first rather poor, and the second considerably improved, but with a good speed consistently maintained, is much better for the girl's future work than one garment well done, but made slowly, since the slow habit will probably continue through life.

The amount of sewing that should be accomplished in the first year of high school is always an open question. For several years in classes meeting five full hours weekly, we have made our minimum requirement thirteen garments that include four undergarments, a kimono, and two types of waist in the first semester; three specially nice undergarments, a waist, and two dresses in the second semester. This means keeping the thought of speed before the students, and accepting, in the beginning, work that is not always creditable; but by the end of the

year the results more than justify the plan, for the girls have speed, wider knowledge of fabrics and shopping, more opportunities for cutting and construction, and have by many repetitions gained good technique. They have acquired the knowledge they will need in their homes as they could not have done in making a few carefully finished garments. The pleasure and pride the girls feel in the large number of usable garments they have made, in the actual assistance they have been to the mother in clothing the family, and in the self reliance and confidence in their ability to shop wisely,—these are some of the good results of the course.

In the second year more is made of the budget for the division of the entire income and also the clothing budgets for young girls and women in various occupations. The keeping of a personal clothing account is encouraged so that expenditures may be watched and compared. A simple form has been planned that can be kept for the year on one sheet of paper, under the headings: Underwear, Outside clothing, Shoes, Millinery, Repairs, and Cleaning. The total can be ascertained at any time by simply adding the columns, and it is interesting and helpful to know just where one stands.

A little work is done in house planning, not so much constructive as critical. There are many easily obtainable plans made by persons who give all their time to this work. Let us choose from them the one that suits the housekeeper of modest means, who must do her own work and who has in addition the care of a young child. How should that plan differ from the one for the grown up family with several daughters? House furnishings must be touched upon, just enough to give a starting point of intelligent shopping.

The millinery is given in the second year, six weeks each in the fall and spring; and the delight of a girl in a pretty hat that she has made, at one-third the expense of a purchased one, is one of the many compensations of a teacher's life.

The high school age is the psychological time for a girl to want to make beautiful things to wear. Let us utilize this natural impulse, and let her make all the articles she possibly can; let everything be for immediate use, give her all the freedom of choice of material and pattern that is practicable for good results, praise unstintedly, recognize ability of every kind, and we shall send out a host of happy, confident, useful girls who will, within a few years, be making the harmonious well ordered homes which America must have.

VOCATIONAL TRAINING FOR GIRLS

GRETA GRAY

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The Smith-Hughes Bill has facilitated and hastened a great advance in education. For too long we have trained at public expense, in the public schools, only a part of the world's workers, while the training of the majority has been left to other agencies. Our colleges and universities are vocational schools where students may master a profession; our high schools are preparatory schools for the colleges and universities; and the upper grades of the elementary schools are preparatory schools for high schools, so that unless pupils expect to go on to college and there learn to earn a living, apparently an utter impossibility for most folks, it seems to many children and to their parents that there is little school can do for them after they have learned "reading, riting and rithmetic." Consequently we find that most children leave school before finishing the first eight grades. We find them beginning to drop out in large numbers from the fifth grade and in larger numbers from the sixth grade. In some places this coincides with the age limit for compulsory attendance, and in most places with the age at which the boy or girl can get a job of some sort. It matters not that this is a poorly paid job with no advancement possible, it gives the child money that is his own; besides he could not get a better job even if he were to stay in school two or three years more, and two or three years to a sixth or seventh grade boy or girl is a long long way to look ahead, and three dollars a week is an immense sum, and, above all, school is dull compared with the beckoning world without.

Schools are at fault. We recognize the principle that education should be universal, and that in a democracy every one should be trained in citizenship; but education is not universal, our schools let most of the future citizens slip away before they know what democracy and citizenship mean.

The Smith-Hughes Bill was designed to stimulate the public schools to make proper provisions to hold on to these youngsters who at present are rushing away from it, by offering them, when they are fourteen years of age, training which will enable them to get a better job than they can without it, training for some trade or for agricultural work, and training for citizenship at the same time. This it does by giving

federal monetary aid to those schools which meet its requirements. It also provides for aid for such schools as give agricultural, trade, or industrial training to men and women long out of school, who, for one reason or another, desire such training. The trade or industrial training includes preparation for such work as that of printer, machinist, welder, dressmaker, milliner, cook, and so forth.

A certain part of this money provided by congress is set aside for aiding schools giving courses in vocational home economics to girls in elementary or high schools, or to girls and women out of school who want such work, because it is conceded that homemaking is the vocation into which most girls eventually go.

When we see what poor housekeepers and homemakers many women are we feel the need for vocational training in home economics in order to forestall the otherwise inevitable course in the school of bitter experience. Courses in sanitation applied to the household, cooking, care of children, would improve health conditions. Courses in selection and care of clothing, the management of the income, would improve the financial status of most families. A course in sociology applied to the family, and a course in the training of children would surely improve familial relations.

There is undoubtedly a tremendous need for courses in vocational home economics. Most women, the percentage varying in different parts of the world, marry sooner or later. The tendency seems to be to marry later, many women spending from five to fifteen years in industry before marriage. This means that more than half of our girls do not have use for the training in vocational home economics until they have been out of school from five to fifteen years—or at least have use for only a limited amount of it. The question I wish to discuss is—"When should this training be given?" Shall we give it in the elementary, or in the high school, or shall we give it in classes organized for those who will have immediate need of it?

The good housekeeper must still be skilled in a number of trades, the successful homemaker is often made so by the temperament with which she is born, but a homemaker may be evolved from unpromising material by careful teaching. Complete training in housekeeping and in home making can not be given in a short time, it must extend over months and years. Because of this and of the almost universal need for training along these lines some educators say "let us require such work of all girls in the public schools." Others say that if such train-

ing is to be given years before it is needed, much of it, most of it, will be forgotten; and, besides, that it will not be so well absorbed when there is no immediate need for it, that it may be given much more effectively and economically at the time when it is needed. But say those of the first group, "we can require it of school girls, and we have the organization to give it to them then; it can not be required of grown women out of school, and how would such classes be organized?" The second group replies that organization is a mere detail, that while homemaking and training could be required if it were wise to do so, with the right kind of courses it will not be necessary to compel women to take them; they will accept them with eagerness.

Because home economics courses are common in our schools and can easily be modified to meet the requirements of the Smith-Hughes law, because men manage the schools, and because they are imbued with the idea that woman's place is in the home, and because they like good food and conceive of home economics as being chiefly cooking, the members of the first group are the ones likely to prevail; the already existing courses will be modified and extended, and all girls, possibly, in some places, required to take this work. The greatest danger in this is that with well developed vocational home economics courses in the high school there will be a tendency not to provide such courses for those out of school.

Looking at the matter from the point of view of the girl and woman there are several reasons why it seems a mistake to emphasize vocational home economics in the regular day school:

1. It seems to make matrimony the sole aim for girls. If they take vocational home economics work they cannot in most cases take any other vocational work, their only way of earning a living will be by housekeeping, they will not always freely choose marriage, for marriage will be the only course open to them.

2. There will be many who will have no opportunity to marry, since there are more women than men in the world, and, besides, some of the men prefer single blessedness. Training for homemaking does not ensure a husband, since men do not choose their wives for housekeeping ability, nor homemaking talent.

3. Since most girls marry from five to fifteen years after they leave school there will be many wasted years spent waiting for a man who comes late or never, years which should be spent in useful work.

4. Habits of idleness are likely to develop during these years of idleness.

5. Training given so long before it is needed will be to a large extent forgotten.

6. A woman whose only training is in housekeeping has a hard time to earn her living if she is thrown upon her own resources, either before or after marriage.

Emphasizing vocational home economics in the regular day schools with the consequent necessary exclusion of other vocational training seems reactionary, a step back to the first part of the nineteenth century, when an unmarried woman was contemptuously called an old maid, and spent her life a dependent, although often at hard work, in the household of some relative. Since that time women have proved themselves successful in almost every trade, business, and profession, and during this time the standards of the home have been steadily rising, due in a very large degree to the broader education and the deeper insight the modern woman has gained by contact with the world outside the home. Conditions in the working world have also rapidly improved, largely due to the presence of women in factory and store. Unquestioningly, we legislate to protect women in industry, to insure them healthful surroundings, to limit the working day, to establish a minimum wage, and it is but a step further to do this for men as well. Woman has given, and has received, by stepping out from the home. Business experience, trade experience, professional experience, does not injure a woman as a potential wife and mother; rather, it improves her. She learns the value of money, she learns to care for her health, her mind is sharpened, she learns the lessons of industry, loyalty, promptness, courage, perseverance, coöperation, self reliance, and a dozen others of inestimable value to the wife and mother.

In the light of these facts let us do this—offer every possible opportunity for training in housekeeping and homemaking to those who are engaged in those occupations, or who are soon to engage in them, but in our elementary and high schools give girls the kind of vocational work which will fit them to earn a living in some trade or business, just as we give such training to boys.

We must never, however, lose sight of the fact that no matter what vocational work the boy or girl is taking, the accompanying training for citizenship should include cultivating a strong healthy body, and learning and practicing the rules of hygiene, including the selection of food

and clothing and shelter. Training for citizenship should also include teaching the responsibilities of marriage and of parenthood. Boys as well as girls need to learn these things, for it takes two to establish a home, and while a woman may be a perfect housekeeper without her husband's help, she cannot be a successful homemaker without his cooperation.

Under the provisions of the Smith-Hughes Bill each state has a Director of Vocational Education, in every state but one a man. Most states have as well a State Supervisor of Trade and Industrial Training, again a man. These men overlook the trades and industries open to girls and women, and center their work on those for boys. This is wrong, for girls should be given the same opportunities as boys. Almost every state has a State Supervisor of Vocational Home Economics, usually a woman who has spent her life in home economics work, is imbued with the missionary idea, and wants to convert every girl to an interest in foods, clothing, and shelter. Every one interested in education, in woman's rights, and in the forward movement of the race, needs to wake up to see where the interests and enthusiasms of these three persons are directing the Smith-Hughes funds.

The June number of the JOURNAL OF HOME ECONOMICS gives us the text of a tentative bill for the promotion of Vocational Home Economics Education, which makes better provisions for this than does the Smith-Hughes Bill. The provision that not more than one-third the sum appropriated to any state may be used for salaries of teachers in schools or classes for those who have not entered upon employment is especially good. Perhaps we will find it best not to use as much as this once we have other classes well under way. In the meantime let us do what we can to secure for girls and women a fair share of the Smith-Hughes money provided for industrial training.

THE LEGISLATIVE PROGRAM OF THE AMERICAN HOME ECONOMICS ASSOCIATION

In view of the increasing interest in promoting Home Economics Education through legislative enactments the American Home Economics Association at its annual meeting at Blue Ridge, N. C., decided to enlarge the legislative committee and extend its activities by developing a state organization.

A representative of the Association has been appointed in each state, one of whose duties is to keep the women of her state informed of proposed or needed measures affecting home economics interests, and to enlist the active support of all women's organizations for such legislation.

It will also be the duty of this chairman to see that the Congressmen of her state are made familiar with such measures and are informed of the attitude of the women of the state toward them.

Each member of the Association is asked to put herself in touch with her State Chairman and offer her services in furthering the legislative program.

At the present time there is before Congress a bill introduced by Senator Reed Smoot providing a small fund for each state for research in Home Economics. The bill (S. 2380) was presented on July 8, 1919 and was read twice and referred to the Committee on Agriculture and Forestry. The value of such state appropriation for research has been satisfactorily demonstrated in the case of Agriculture, and the Smoot bill should receive the unanimous endorsement and active support of every woman interested in progress in homemaking.

Another bill in contemplation at the present time is one "to provide for coöperation with the states in the promotion of Vocational Education in Home Economics and to appropriate money and regulate its expenditures."

This bill has been submitted to various state departments of Vocational Education and revised in the light of the suggestions which have been received. While it has not seemed wise to bring this bill before the present session, there is reason to believe that it will be introduced at an early date and it also will need the active support of the Committee and the Association.

The arguments for this bill were given in detail in the article which appeared in the June number of the JOURNAL. The article may be summarized briefly as follows:

1. The administration of Home Economics funds should be unhampered by the rules for Trade and Industry.
2. Better financial support for Home Economics education is needed.
3. The distribution of funds for Home Economics should be on the basis of total population rather than on the basis of urban population.
4. Increased funds are needed for administration and research in Home Economics.

Two changes have been made in the wording of the bill since it was published in the June JOURNAL. One provides that such education shall be conducted in schools or classes which are under public supervision or control; the other provides that at least one third of the sum appropriated to any state shall be expended for the salaries of teachers in evening or part time classes especially designed for those who have already entered upon employment.

Part of the text of the Smoot Bill follows:

A BILL TO PROVIDE FOR AN INCREASED ANNUAL APPROPRIATION FOR AGRICULTURAL EXPERIMENT STATIONS, TO BE USED IN RESEARCHES AND EXPERIMENTS IN HOME ECONOMICS, AND REGULATING THE EXPENDITURE THEREOF

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be, and hereby is, permanently appropriated out of any money in the Treasury not otherwise appropriated, to be paid as hereinafter provided, annually to each State and Territory for the more complete endowment and maintenance of agricultural experiment stations now established or which may hereafter be established in accordance with an Act of Congress approved March 2, 1887, and Acts supplementary thereto, except that in States in which the experiment station established under said Act did not on July 1, 1919, have a department for the investigation of home economics, the beneficiary of this Act shall be that institution which is now receiving the benefits of an Act approved May 8, 1914,¹ to provide for cooperative extension work in agriculture and home economics, the sum of \$2,500 in addition to the sums named in said Acts, beginning with the fiscal year ending June 30, 1917, to be applied only to paying the necessary expenses of conducting original or confirmatory researches and experiments bearing directly on home economics, including both domestic science and domestic art, and printing and disseminating the results of said researches or experiments, having due regard to the varying conditions and needs of the respective States and Territories.

¹ Smith Lever funds.

SEC. 2. That for the purposes specified in section 1 of this Act there are also appropriated, to be paid, as hereinafter provided, to each State and Territory an additional sum of \$2,500 for the fiscal year ending June 30, 1918, and an additional sum of \$5,000 for the fiscal year ending June 30, 1919, and an additional sum of \$7,500 for each fiscal year thereafter. No payment, out of the sums appropriated by this section, shall be made in any year to any State or Territory until a sum equal to that appropriated by this section for each State and Territory has been appropriated by its legislature, or has been otherwise made available for that year by State, county, experiment station, or local authority for maintenance of cooperative research work and experiments under this Act.

SEC. 3. That cooperative research work and experiments shall be carried on in such manner as may be mutually agreed upon by the Secretary of Agriculture and the State or territorial experiment stations receiving the benefits of this Act. Bulletins or reports of progress, giving the results of researches or experiments in home economics, shall be published by said stations from time to time, and shall be distributed free of charge in accordance with such plans as the Secretary of Agriculture and the experiment stations may agree upon.

SEC. 5. No portion of said moneys shall be applied, directly or indirectly, under any pretense whatever, to the purchase, erection, preservation, or repair of any building or buildings, or to the purchase or rental of land, or to the compensation of any person engaged during the same period in the performance of any duties other than conducting researches or experiments bearing directly on home economics, or printing and disseminating the results thereof.

Both of these bills are being actively supported by the Federation of Women's Clubs under the leadership of Mrs. Greene the national chairman for Home Economics and they should be pushed by every professional worker in Home Economics.

A list of the State Chairmen and of the members of the Educational Committee of the Senate and House will be published in the BULLETIN of the Association.

FOR THE HOMEMAKER

A PLEA FOR THE PRESCHOOL AGE

DOROTHY REED MENDENHALL

Children's Bureau, Washington, D. C.

One of the undeniable benefits that war has brought to us is a hastened awakening of national responsibility for the welfare of our child population. The rejections in the first draft for our national army demonstrated to the public the need of an active crusade to save our children. It is well known that almost one-third of the men examined in the first draft were found incapable of serving their country, from either serious disability or disease. An analysis of the causes for these rejections proved them to be largely of a preventable nature, the result of unintelligent care or of neglect in early childhood.

Moved by such conclusive proof of the need for physical improvement of the nation and by an appreciation of the detrimental effect of war on children, all agencies engaged in child welfare work in this country quickened their activities. The Children's Year, inaugurated by the Children's Bureau, has been one means of drawing people's attention to the bad conditions already acting detrimentally to the life, health, and possibility for normal development of our children, of emphasizing parental responsibility in these matters, and of pointing out the desirability of continuity of State supervision of the child from the prenatal stage through adolescence.

War has always been a great menace to child life. It is no exaggeration to say there is scarcely any phase of childhood in the United States that has not suffered injury during the past years. This could not well be otherwise, with the tremendous, widespread increase in the cost of living that has occurred since 1914, even in this country which has suffered least in the war.

According to the *Monthly Labor Review* for November, 1918, the average retail price for the staple articles of food had increased 72 per cent in the United States during the five year period from September,

1913, to September, 1918.¹ Every article for which prices were secured had increased 56 per cent or over, five articles had increased over 100 per cent, and milk, the indispensable food for infancy and childhood had increased 61 per cent. The evil effect of this general marked increase in the cost of living is well demonstrated by the considerable disuse of milk for children past infancy that took place in our large cities as the price of this commodity rose. Even the most ignorant mother has become educated to the necessity of providing cows' milk for the young infant, but the general public has not yet awakened to the importance of milk in the diet of the growing child. Studies made by the Children's Bureau last year in Washington, D. C., Baltimore, Maryland, and New Orleans, Louisiana, showed that comparatively little milk was given to children between two and seven years of age, and that tea and coffee were the usual substitutes for milk. In the Washington families studied 45 per cent of these young children were having no fresh milk to drink, in Baltimore 66 per cent, and in New Orleans 70 per cent. In Baltimore, where the families had been under observation for some time, a marked decrease (from 60 to 29 per cent) in the number of such children drinking milk over the number drinking milk the year before could be demonstrated. More than this, the average daily amount of milk purchased by the families using some milk was only two pints and the families studied included at least six persons, two of these children under eight. In four-fifths of the families there were children under two.

There can be no doubt that the most important single factor in the chance of the child for health and the realization of his possibilities is that the father's earnings or income should be sufficient for the essential needs of the family. This economic basis for child welfare is often forgotten in our interest in some special aspect of the child problem. The minimum family income, or the income necessary to allow of health and unimpaired efficiency in a normal family of five, consisting of father, mother, and three children, has undoubtedly increased tremendously in the last few years in this country. It is stated to have doubled in the past three years in New York City. Recently before a United States Senate committee hearing on the subject, \$1500 was the amount set as the minimum income for a family of five, in the District of Columbia, at the present time. According to a recent report of Miss Florence

¹ Up to August 1919, the increase had been 91 per cent.

Nesbitt, then Director of the Food Conservation Section of the Cleveland Women's Committee of the Council of National Defense, the sum needed in Cleveland and in Toledo, Ohio, for the maintenance of a normal family is practically the same.

How many families are living near this minimum today—or below it—is shown by the recent estimate given in the *New York Evening Post* that over 90 per cent of families in the United States are living on \$2000 or less.

The cost of food, of course, is not the only feature in the family budget that has been increased by war, but food is most fundamental in its relation to growth in childhood. In the old estimates of the family budget, the food allowance used to be given as from 15 to 25 per cent of the family income. According to studies made within the last year in several of our large cities, it now takes from 40 to 60 per cent of incomes around \$1000 to buy sufficient food for a family of five, even when the purchasing and selection are made intelligently.

In an analysis of the diets in families with incomes ranging from \$640 to \$2500 that is being carried on by the Office of Home Economics, U. S. Department of Agriculture,² the cost for a man's food for one day in New York City was found to range from 32 to 56 cents. The lowest expenditure for the total day's food (3230 calories) and the highest number of calories purchased for 1 cent (90 calories) was in the mother wage earner group, while the highest cost of a day's meal was in the professional group. The average for the whole group was 46 cents a day. Studies in other cities under various auspices corroborate the fact that a man's weekly food can not now be purchased for less than \$3 a week, and since the cost of milk, the essential in the child's diet, is so high we can not at the present time feed a child adequately on a much smaller expenditure than that needed for an adult.

Figures such as these make us realize how much has to be spent for proper nourishment and how great is the danger that the unintelligent mother may for reasons of economy curtail the food necessary to maintain health and to promote growth in her young children.

Malnutrition in a child is best gauged by the relation of weight to height. Any child who is 10 per cent below weight for his height is undernourished, regardless of his age. The appearance and substance

² Office of Home Economics. Some Results of Recent Work. C. F. Langworthy, *Jour. Home Econ.*, 11 (1919), pp. 13-20.

of the child must also be taken into consideration in determining the grade of malnutrition. Flabby muscles, hollow cheeks, sallow skin, and pale lips and mucous membranes are usually found accompanying marked underweight. Lack of appetite, listlessness or irritability, and disturbed sleep are other manifestations of undernourishment. The rosy cheeks, the firm muscles, and the bubbling spirits of health give an entirely different picture. Dr. William Emerson, the great nutrition expert, says that an undernourished child has five physical defects, such as adenoids or bad teeth, to a well nourished child's one.

Malnutrition is caused primarily by too little food, too little of the right sort of food, or inability to use the food taken into the body. The physical defects which have been mentioned, though usually the effect and not the cause of undernourishment, do increase this subnormal condition, so forming a vicious circle. Poor living conditions in the home, and bad health habits are important secondary factors which often need consideration.

Malnutrition starts most often in the preschool age, for at this period the diet of the child is in a state of transition from the diet of infancy to that of a young adult, and great wisdom is needed in the selection of foods during these tender years, and in the teaching of proper food habits, upon which the future health of the child largely depends.

The preschool age, from two to six, is the period in which the child is most susceptible to infectious disease, presumably because inherited immunity and the immunity taken in with the mother's milk are used up before individual immunity has been developed. Probably one-third of all deaths in this period are due to infectious disease. The so-called children's diseases get in their deadly work at this time, not only causing a large toll of deaths, but crippling and maiming for life many of the victims, and, worst of all, stunting, for at least a short period, every child in growth and development. The remediable defects so prominent in the draft rejections are largely the aftermath of these children's diseases, and the deadliest of all infections, the common cold.

The preschool age, which probably now includes ten million children, is undoubtedly the most neglected age, neglected both by the parent and by the various agencies devoted to different aspects of child welfare work.

We hear a great deal just now about the malnutrition of our school children. From 15 to 25 per cent of our 22,000,000 school children are estimated as undernourished, but little is made of the fact that this

undernourishment is present in a large proportion of the children when they enter school. Malnutrition has undoubtedly increased greatly in our city schools—in New York City it jumped from 5 per cent in 1914 to 21 per cent in 1917—but who can doubt that it has increased proportionately in the preschool child? The London schools however, where over 34,000 children in 1916–17 received a meal at school, report “the progressive reduction in the number of children found with poor nutrition has been maintained, the figures in this respect being better for 1917 than for 1916, and (for those leaving) less than half the pre-war figures” (14.7 to 6.2 per cent).

The infant welfare stations and baby hygiene associations, with their visiting nursing system, are looking after the babies of our cities. The health of the school child is under medical supervision, and dental clinics, open-air schools, midmorning lunches, and even nutrition clinics are being instituted for his benefit. Even the prenatal period is being safeguarded in many cities through maternity centers, assuring children a good start in life. But practically nothing is being done, either in the cities or in the rural districts, for the runabout. The mother in her ignorance comforts herself that the baby once out of infancy is able to take care of himself, perhaps under the eye of an older sister. The mother's time is apt to be filled with household duties or the care of the new baby. The toddler, the little child from 2 to 6, has to be left to his own devices.

In the homes of the poor, there is apt to be only one regular hot meal a day, and that the night meal, when the father comes home from work. The little child out of school has most irregular meals. When he awakens he is given perhaps a slice of bread, often with tea or coffee, and this inadequate breakfast is not early, as his bed hour is usually far too late. He is given a snack at noon, an apple or some delicatessen purchase. His diet too often includes no milk, no butter, and no green, leafy vegetables, the essential growth foods, and the protective foods of health. He runs in and out of the house, often insufficiently clad, sometimes with damp or wet feet. His bed time is set by the convenience of the rest of the household and not by his need for long hours of unbroken sleep. Yet these are the years of very great physical growth, an average annual increase of 5 pounds in weight and 3 inches in height, and of greatest brain development. No medical supervision has been organized in this country for the benefit of these little children. This is truly the neglected period.

The Weighing and Measuring Test of Children's Year in which all the States took part was an endeavor to reach a large number of homes having children under 6 years of age and to direct the attention of the family to the question of their possible undernourishment and to the parental responsibility for the health of the child. Undoubtedly many millions of homes were reached by this message, while in many communities, the Weighing and Measuring Test was carried out most scientifically under medical supervision, including a physical examination of the children. The results only corroborate our fears of what is happening to our little children.

The value of this particular propaganda will be rendered permanent according to the amount of follow-up work that develops as a result of Children's Year and according to the impetus that the arousing of public interest may give to increasing State and city protection for all children.

Much of our present good infant welfare work is nullified by the neglect which the child between two and six years of age suffers before he falls again under scientific supervision. Continuity of care should be made possible for every child in our country from conception through adolescence. Every city of any size should have a child hygiene division of the city board of health, with a full time trained physician in charge of this work. Under such direction and with the coöperation of all private agencies working for child welfare, health centers would be made available for every mother in the community—welfare stations where mothers may go for free consultation with trained physicians regarding their health and the health of their children, and from which centers trained health visitors shall be sent to instruct women in their own homes regarding the care of the infant and the young child, especially in the principles of nutrition and the selection of proper food for the family. Similar health centers must be started in rural districts under state supervision.

The great development of work for the child during the war period in England has much of interest for us, much to stir emulation. The toddler's playground, the nursery school, and other municipal creations to care for little children outside of the home, are not however the best solution of the preschool problem, nor the one most needing development in this country. We need not more day nurseries, but more trained and intelligent mothers to bring up these little ones in good homes, where the necessities for health and decent comfort are provided.

I realize that there are many urgent fields for child welfare demanding attention, but there are only two periods of childhood whose needs are practically ignored—one of these is the preschool age. Surely no time of a child's life demands more careful supervision than that during these early years, which have been called "the formative period for life," when the stamp is placed on future physical development as well as mental and moral well being, the years when infectious diseases most prevail and when serious physical defects most often start.

It seems to me that just here is a wonderful opportunity for the more fortunate women of America to be of very real help in the safeguarding of our child population in the reconstruction period. All of us wish, as we never wished before, to be of service to our nation, and this is a task that demands enthusiastic support and devoted lay service to make it a success. Many women have been giving regular hours every day or regular days every week to war work, to put our boys in the trenches and to maintain them there. What possibilities could be realized if this energy and devotion, no longer needed in keeping our army at the front, could be diverted to building up our third line of defense—the children of the nation.

QUERIES

Does your grocer stand on the edge of the sugar and flour bins to take groceries from the shelves?

Is food protected from dust, flies, and handling?

Are vegetables raised the required 18 inches from the floor?

Is food protected from cats and dogs?

Are bakery products covered during delivery to the shop?

If any one of these questions cannot be answered favorably, report the fact, over your signature, giving the name and address of the dealer. An effort will be made to assist him in correcting this condition.

EDITORIAL

Foreign Letters. The following extracts from letters sent to Dr. B. R. Andrews of the International Committee on Teaching of Home Economics will be of interest not only to the many friends of Mrs. Strong but to all those interested in the development of home economics in other lands. The letters were accompanied by "Instruction Cards" in type that the JOURNAL is unable to reproduce (or its editor to understand), and by a quarterly cost card and a monthly supply card that adds to the familiar list of "brooms, brushes, mops" such articles as "Jagannathi," "Khadie." The best wishes of the JOURNAL are with Mrs. Strong, and the hope that at some time she may be able to write for us an account of her many experiences.

December 28, 1918.

Your circular letter has been bearing fruits and I have been asked to come to several schools to give talks and hold conferences. Unfortunately, I am so much occupied here that it is not easy to get away during the cool weather, and in hot weather traveling is almost impossible. I did go to Bombay for a week of intensive work with the Parsee Girls' School Association. But that is the extent of my lecturing outside Baroda. I am now securing His Highness the Maharajah Sahib's opinion as to the possibility of my accepting a certain invitation to the Dacca, Chittagong and Rajshahi Divisions for conference and lectures on the education of women in its relation to the house. It is possible that I may make arrangements to remain after my contract with Baroda expires and make a lecture tour. Thank you at any rate for so kindly introducing me to the colleges and schools in India.

We too have food problems in India, for the rains failed us this season and the various grains are far short of the normal crop. I believe you would be interested in samples of some of these grains and pulses that constitute the bases of the vegetarian diet in India. The pulses are very rich in protein and seem much more easily digested than ours. It is largely a question of quantity and not quality that furnishes the food problem for us here. As I have said to others we have many lessons in home economics to learn from India. We are wasteful in the extreme by comparison, and for the first time I begin to realize how many things that we consider necessities are really luxuries.

My educational work lies in four directions. First is the college course in household arts for college or graduate students. This is a two years' course

and will lead to a diploma. Secondly, I am giving a one year course in rural home economics for the Teachers' Training College for men. Thirdly, a brief course in household arts for the Girls' High School. The Principal of the school gives the talks on house sanitation. Another teacher gives the work in clothing and I conduct the food course. The fourth aspect of my work is purely technical education. I have given courses in housewifery to the Bungalowalas, who correspond to our house maids, and a course in food and cookery to the kitchen and dining room staffs of the Maharajah's household. We are now organizing a course for staff teachers, who will be utilized to train the servants in the various palaces. We will use the Guest House as our chief practice field. I shall not undertake to go into the other field of my work. Mr. Clarke, the Commissioner of Education, Baroda State, constantly reminds me that fourteen annas of the sixteen, which make up my Rupee of time, belong to the practical institutional-management phases of the work, and I think he is about right. I could give you a list a yard long of what this includes, but will spare you.

We are publishing a couple of series of pamphlets in Gujarathi and Marathi, the vernacular languages of Baroda, and I will send you a sample, with my Announcement of Courses at Baroda College. I only hope that the work will take such root that it may grow after I leave and that is why I am anxious to start as many things as possible.

July 22, 1919.

Your letter brought some responses and I was able to visit the Girls' Schools in Darjeeling and Calcutta, as well as in Naini-tal and Bombay. Very little is being done in most of these schools along our line, but there is an interest and the authorities are beginning to be aroused to its value. We have recently placed sewing in the elementary schools of Baroda State as a requirement and the teachers are being trained for this subject. In some schools also cooking is taught, but usually a Darji teaches the sewing and a Brahmin cook teaches the cookery, because the teachers are not qualified to teach either. My own efforts have been along the line of training the teachers, but we have now come to a point where new courses of study must be carefully worked out and texts revised. I wish I were half a dozen people instead of one, then I might hope to accomplish something.

I have a thousand questions I should like to ask you but since you are a busy man, I will ask only a few. These deal with the cost accounting in household management. I would so much like to know what the budgets of some of the large establishments in America apportion for repairs on furniture and furnishings, for cleaning and upkeep, including the cost of cleaning supplies. We are trying to standardize the cost of cleaning our Palaces and I will enclose a couple of our cost sheets. How is this cost accounted for in large homes and institutions with you? Have you any idea what Mr. Vanderbilt or Mr. Astor

or Mr. Wilson pays a year for keeping his house clean? This is exclusive of labor, for I recognize the fact that labor conditions are so different that it is not fair to make comparison there though I should be interested also in knowing how many maids and cleaners are employed for a given number of rooms.

We are installing labor saving devices and trying to improve our system of work and at present I have a class of staff-foremen, who after a year's training in housewifery will be placed in charge of groups of house-workers to train and supervise. At present they are in the furniture factory learning how to polish and repair furniture. I have fair hopes of them..

I just learned that Miss Goolbai J. Bahadurji, a Parsi lady, Principal of the Parsi Girls' High School in Bombay is going to Teachers College next fall to study household arts. I gave a week of lectures for the Parsi Girls' School Association and Miss Bahadurji was most enthusiastic. I am indeed glad that she has the opportunity of going to America and I hope you will meet her in your classes and help her all you can.

(Signed) ANN GILCHRIST STRONG,
Director of Household Arts, Baroda, India.

From far Korea too has come a letter to the JOURNAL. Will not this appeal for help make many of our readers more ready to send us articles embodying their own experiences that might be of immeasurable assistance to one working so far away from the helps that are so abundant here? The letter inclosed some interesting post cards showing house interiors, with the comment, "They cannot show the filth seen in so many houses."

My dear Helpers:

I address you in this way because here in this land your JOURNAL is needed many times worse than at home. I am the first home economics worker to come to Korea and I feel so inadequate for the great problems which have already confronted me.

I wish you could know how eagerly I read the JOURNAL, looking for answers to food and industrial problems which I shall soon be called upon to cope with.

My work here is to establish and keep running an industrial department in a girls' school, which will enable poor girls to get an education. Now, they do sewing and fancy embroidering of all kinds and I must say they are very clever with the needle. Later, when I understand the food situation better, I hope to introduce the study of the food problem, and through the school girls reach the mothers in the homes and gradually be able to help the poor little sick, dwarfed, poorly nourished babies.

I am truly thankful for the JOURNAL OF HOME ECONOMICS.

(Signed) ETTA BELLE GRIMES,
Taiku, Chosen (Korea), Japan.

Another Way to Help the Journal. "Referring to the advertising we have been running in your JOURNAL, we regret to say that we have received no inquiries whatever from this advertising, and we are therefore obliged to cancel the same, to take effect at once." This quotation from a letter sent to the publishers of the JOURNAL by a firm who has lately been advertising with us suggests one way in which subscribers may help in the support of the JOURNAL.

As everyone knows, nearly every magazine is largely dependent for its financial success upon the advertising it can command. The JOURNAL has several times sacrificed something of the advantage it might have received, in that it has scrutinized its advertisements with especial care, and has refused some, either because they were offered by unreliable firms, or because they made statements too extreme even for the latitude usually allowed to one advertising his own products.

Yet the JOURNAL desires more advertising, not less. There have been occasional statements from other advertisers that when booklets or samples of materials are offered for domestic science teachers no response is received. If every subscriber who makes use in any way of the advertisements in the JOURNAL would take pains in writing to advertisers to state that the advertisement was seen in the JOURNAL it would be of distinct service in retaining the advertisers who now use our pages, and perhaps in securing more. It is an easy thing to do, and would count.

The Institution Economics Section¹ of the American Home Economics Association held its annual meeting at the University of Wisconsin, Madison, June 9-13. The program opened with addresses of welcome from President E. A. Birge, Abby Marlatt, and Elsie P. Leonard, and a response by Lenna Cooper.

Lively discussion followed the excellent addresses of Mrs. Hughes of the McAlpin on Opportunities for Women in the Modern Hotel, and Mr. Gregory of the LaSalle on Administration of the Business of the Modern Hotel. Both were most gracious and helpful in response to questions.

The sessions devoted to teaching problems resolved themselves into a very free and vigorous discussion over basic requirements of a course for the training of dietitians. Miss Cooper, at that time Supervising Dietitian for the Army, brought to the notice of the Conference the tabulated

¹The reports of the Institution Economics Section and of the Textile Section were delayed in reaching us and therefore could not appear with the other reports in the October *Journal*.

results of a questionnaire sent out by her to schools and colleges giving institution training, by which she sought to learn what subjects were taught in home economics and what subjects could be considered as fundamentals for institution training.

The program devoted to the Dietitian set our wits to working and brought out many pertinent questions as to training, status, and ethics. The address made by Dr. Hugh Greeley on the Relation of the Physician and the Dietitian in the Hospital was especially rich in food for thought.

After several sessions of unusually free and frank discussion in assembly and in committee, a proposed two-year course for dietitians was drawn up for consideration at the Blue Ridge meeting and also at the meeting of the American Dietetic Association in Cincinnati in September. Emphasis was laid, and should be laid, on the fact that determination of the length of time in training was not the all-important point sought for so much as the determination of certain fundamental subjects which could be fairly and definitely required for a course in Institutional Administration for Dietitians.

The ever-present and highly interesting School-Lunch and Cafeteria problems were given ample space and treatment under the able leadership of Miss Treen of the New England Kitchen, Boston. Excellent talks, discussion, and pictures—both stereoptican and motion—made this section prominent and enjoyable.

Tea Room Management, Dormitory Administration, and Marketing for the Institution were presented by experienced administrators in these types of institutional work.

The conference numbered only about one hundred, but there was a fine spirit of comradeship. Everybody came to know everyone else and many, because of our "family life" in session and out, found help in the solution of vexatious problems. Several excellent talks by men skilled in the building of various types of equipment and furnishing proved particularly helpful. It was very gratifying and inspiring indeed to have with us prominent hotel and restaurant people—both men and women—from the East and Middle West, and institutional administrators from the East, far West, and South.

The sessions were enlivened by motor trips around lovely Madison, by boat trips on her lakes, and by visits to the many points of interest on the University Campus. The Department of Halls and Commons was open at all times to the visitors—The Central Kitchen proving to be a mecca at all hours.

Through unexpected delay in the arrival of the report of the Madison meeting sent to Blue Ridge for the Institution Economics Section meetings, and also through an unfortunate confusion in regard to leaders and meetings, it is much to be regretted that Institution Economics did not play so prominent a part in the Blue Ridge Conference as the Chairman sincerely planned and expected.

ELSIE P. LEONARD,
Chairman.

The Textile Section. In the absence of Ethelwyn Miller, chairman of the Textile Section, Mabel Trilling acted in her stead.

The reports by committees appointed the preceding year constituted the program.

Marion Weller, chairman of the committee appointed to investigate the teaching of textiles and clothing to find out in how far the work functioned in training intelligent buying, sent her report, which may be outlined as follows:

The committee sent out a letter¹ to high schools and colleges and although they thought that the returns did not sufficiently represent the various sections of the country the responses were of interest.

1. In many schools students are required and in others merely encouraged to keep systematic accounts of their expenditures.

2. Budget making is studied in many places, usually on a theoretical basis. Many teachers said the work on budgets was to be introduced the coming year.

3. No reports indicated work based on an allowance for clothing. Most of the answers reported that students' selection of clothing showed improvement as a result of clothing study. Some felt the limitations of the mothers' supervision and of the limited assortment of local stores.

4. Practically all reported teaching of renovating and remodelling.

5. Only one school reported a plan for testing garments for length of service.

6. The courses for normal schools and colleges showed definite work in design. Some reported dissatisfaction with the cooperation thus far secured between the art courses and clothing courses in carrying out the designs.

7. Some schools reported shopping trips and excursions to mills, others trips to nearby towns under supervision. All reported stores and buyers very willing to coöperate.'

Many expressed appreciation for the suggestions afforded by the letter and intended incorporation of the ideas into their courses for this year.

¹ The letter appeared in the August *Journal*, p. 367.

The committee appointed for the purpose of investigating the Red Cross work done in the clothing classes reported that the work planned had been discontinued as the needs changed at the signing of the Armistice.

Mabel Trilling reported work done at the University of Chicago by the group appointed to investigate the content of courses of study in textiles and clothing and also to consider the use of scientific tests.

The work of this group has been of unusual importance, for they have made and are continuing a very detailed analysis of courses of study and text books in common use, for the purpose of determining how the time and attention of the student are being divided in the various phases of the subject. A report of this work will be published by the University of Chicago Press, and will be intensely interesting to all teachers of home economics.

Two new projects were launched as a result of questions brought up in this meeting.

Miriam Birdseye was made chairman of a committee to attempt the standardization of a few materials in common use.²

An effort to improve the quality of interiors shown in moving pictures resulted in the appointment of a committee.³

The meetings were very well attended and show considerable promise of the growth of the importance of the Textile Section.

The election of officers for the ensuing year resulted as follows: Chairman, Mabel Trilling; Secretary, Florence E. Winchell.

FLORENCE E. WINCHELL,
Secretary.

Announcement. The International Committee on Teaching of Home Economics would like to secure the coöperation of some member of the Home Economics Association who can read and write the following languages fluently: Spanish, Italian, Danish, Swedish, French and Japanese.

The Committee is planning to send a communication to teachers of home economics in foreign countries.

Persons willing to coöperate by translating and handling foreign correspondence for the Committee are asked to communicate with Dr. B. R. Andrews, Chairman of Committee, Teachers College, New York City.

² A more detailed account of the work of this committee is to be found in the September *Journal*, p. 388.

³ For further details see the general report of the Blue Ridge Meeting in the September *Journal*, p. 412.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Broken Homes. A Study of Family Desertion and its Social Treatment. By JOANNA C. COLCORD, Superintendent Charity Organization Society of the City of New York. New York: Russell Sage Foundation, 1919, pp. 208. \$0.75. By mail of the Journal, \$0.80.

In this small volume, devoted to the experience of the social case workers in their attempt to deal with a class of families which make up from ten to fifteen per cent of the family problems presented to the agencies in many of the cities, are discussed the peculiar difficulties presented by the family deserted by the husband and father and by the family in which the husband, while remaining at home, fails to perform his duty of supporting his wife and children.

The problem of the deserted wife has always been recognized as far more difficult than that of the widow. The man, while absent for purposes of support and counsel, is present as a demoralizing and disturbing influence. Miss Colcord discusses in an illuminating way, under two headings, the causes leading men to desert their families: (1) Contributory Factors in the Man and Woman, such as Mental Deficiency, Faults in Early Training, Differences in Background, Wrong Basis of Marriage, Lack of Education, Occupational Faults, "Wanderlust," Money Troubles, Ill Health, Incompatibility, and Vicious Habits; and (2) Community Factors, such as Interference of Relatives, Racial Attitude toward Marriage, Community Standards, Lack of Proper Recreation, Influence of Companions, and Expectation of Charitable Relief. There is an interesting survey of the changed attitude of social workers toward the problem and toward the widespread agreement now pre-

vailing among them that this type of family presents one of the most valuable opportunities for thorough case work and for treatment based upon full understanding particularly of the man's history and of the possibilities not only of his reassuming but of his continuing to perform his duties to the family group.

Miss Colcord points out that the greater flexibility of treatment now possible to social caseworkers is in large part due to the presence on the statute books of many states of so-called "non-support and abandonment" laws secured largely through the efforts of such workers, and resulting from their attempts to deal with families of this kind.

This discussion is intended for the special use of the social caseworker and is therefore devoted largely to the discussion of the technique of investigation and of treatment. It is needless to say that no social caseworker can afford to be without this volume nor to remain unfamiliar with its suggestions as to available sources of information, possible sources of cooperation, and necessary preparation for dealing with families that constitute one of the most convincing proofs of the necessity for close examination of our institutions and evidence of the absence of clear understanding as to the purposes to be served by the various agencies we have taken for granted but do not consciously develop so that they may sufficiently serve their ends.

It may therefore be interesting to recall the changes that have been taking place in the status of the family. The statutes to which Miss Colcord calls attention which constitute abandonment and non-support as offences punishable by fine and imprison-

ment give for the first time to wife and children an enforceable right to support. In the absence of such statutes, the children have no enforceable claim and the wife a remedy so difficult of enforcement¹ as to render it negligible. Moreover, under the earlier law of many of our states and under the prevailing law of many of the communities in which the men and women now under the care of social agencies passed their childhood, the relation of the man to the members of his family was like that of an owner to a thing. "Can I not do what I will with mine own?" "Are they not *my* wife and children?"—the young husband asks of the social worker in Galsworthy's *Demos*—with inexorable logic.

It may not be quite true to say that wholly new duties have been laid upon the husband and father, for the moral duty was always declared to exist, but it is correct to say that the "non-support and abandonment" laws secured by the social workers taken into consideration with the "married women's property rights" laws secured by the feminists create a confused and confusing situation for the husband and father which both husband and wife must in many cases certainly find difficulty in understanding. It is perhaps the responsibility of the home economics expert to bring it about that the boys and girls growing up today have a clearer understanding and a better preparation in that understanding for fulfilling the duties of family life.

Miss Mary E. Richmond, the editor of the Series to which this book is a contribution is the inventor of a term, the *intermittent* husband, describing one group of men whose families must be cared for. Not only is help needed, then, at the point of clarifying

the services which the family group is to be called on to perform, but there is great need of recalling the fact that so long as boys and girls are allowed to go to work early at intermittent and ineducative employment, there may be expected intermittent performance of domestic duties, the casualizing of domestic life.

Another point at which the possibility of adequate service by the caseworker is dependent on the development of community resources is that at which treatment would wish to make use of prolonged detention. Until the place of detention, whether police station, city bridewell, jail, or penitentiary obtains provision for educational occupation in sanitary surroundings, among socially educative relationships, no social worker can make use of imprisonment with any hope of building fine family life on the experience of commitment. And most places of detention lack all these factors in equipment, and are foul places of demoralizing associations where men are kept in deadening idleness. It is difficult to think of a prison sentence serving as "a salutary dash of cold water" (p. 99). Rather, with prisons as they are in most jurisdictions to-day, it must generally seem like an immersion in a foul and stagnant pool!

Miss Colcord makes clear how definitely the results of the caseworkers' labors depend upon the social intelligence of the judges. It is also clear that both the men and the women are often the victims of lack of education, of early exploitation, and of deficiency of preparation for the responsibilities of family life.

S. P. BRECKINRIDGE,

Chicago School of Civics and Philanthropy

¹ Under the doctrine of "necessaries."

NEWS FROM THE FIELD

The Connecticut Home Economics Association will try this year a new plan for district organization in their state. In each county or district in the state the executive committee is to appoint a director, thus giving local representation. It is hoped that this will make the association more alive and vital.

The duties of the directors will be to aid the secretary in keeping the membership and mailing list up to date, to aid the president and executive committee in planning the year's program so that it will meet local needs, and generally to represent the association in their districts. The whole organization without much or any larger expense can be of greater service, and at least names of those who have been out of the state for years will not be on its mailing list.

These plans were made at the June meeting held at the Connecticut State College. The general topic of discussion at this meeting was, "For what are we training our girls in home economics?"

The new officers are: Orissa M. Baxter, Hartford School of Religious Pedagogy, President; Annie I. Robertson, 219 Church Street, Hartford, Corresponding Secretary-Treasurer; Maude E. Hayes, Councilor.

Kansas State Agricultural College. The changes in organization in the Division of Home Economics, which have been under way for more than a year, have resulted in a considerable enlargement of the teaching staff and of the work of the several departments.

Mrs. Mary Pierce Van Zile who had been Dean of Women and Dean of the Division of Home Economics resigned the latter position, July, 1918, in order to devote her entire time to college social problems as dean of women. At the opening of the

college year in September, 1918, Dr. Helen B. Thompson who had been professor of nutrition and dietetics in Connecticut College for Women became dean of the division.

Olive A. Sheets and Loula E. Kennedy left the department of Domestic Science to go into war work in the summer of 1918. Margaret H. Haggart resigned as Professor of Domestic Science July 1, 1919.

The department of Domestic Science has been divided to form a Department of Food Economics and Nutrition and one of Household Economics. In these new departments the following appointments have been made for this year.

Food Economics and Nutrition: Professor, Dr. L. Jean Bogert from Yale University Medical Staff, Department of Experimental Medicine; Associate Professors, Elizabeth Rothermel, A.M., Columbia University, 1913-16 Instructor, University of Washington, 1917-18 Dietitian Peter Bent Brigham Hospital and University of California Hospital; Martha S. Pittman, A.M., Columbia, recently in extension service Pennsylvania State College.

Household Economics: Professor, Hildgarde Kneeland, A.B. Vassar, 1914-17 Instructor, University of Missouri, 1917-18 graduate student Columbia University, 1918-19 Gilder Fellow in sociology; Associate Professor, Ellen A. Reynolds, A.M., University of Chicago, previously Assistant Professor, University of Kentucky, and in war emergency work in cooperation with Virginia Polytechnic Institute.

Each department has its usual corps of instructors and assistants. A research laboratory is being equipped in the home economics building. Space has also been provided for the Division of Home Economics in a new research laboratory established for the use of the various departments

working on problems in genetics and animal nutrition.

The Department of Domestic Art has been renamed as Department of Clothing and Textiles. This department is adding a course in clothing salesmanship, and preparing to develop more fully the economic phase of the study of clothing. Additions are being made to the equipment of the textiles laboratory.

The Department of Applied Art, also in the Division of Home Economics, will be enlarged by the addition of one instructor. Miss Grace C. Averill, instructor in design, and Miss Florence Hunt, instructor in costume design, studied in the University of California during the summer session.

Home Economics Courses at the University of Wisconsin have been enlarged to include several new majors, so that at the beginning of the Junior year, it is now possible to make a choice from six. In addition to food and nutrition, general home economics, and textiles, which have formerly been given, there are now offered hospital administration, vocational education, and bacteriology.

The major in hospital administration includes in addition to subjects required in all home economics majors, courses in anatomy, pharmacology, clinical medicine, and hospital practice in the University and city hospitals. After taking her degree, the graduate may become a registered nurse upon completion of one year of residence in an approved hospital.

The major in vocational education is designed to equip teachers of homemaking in vocational schools. Opportunity is offered to obtain special technical and vocational training in addition to the regular home economics work.

The major in bacteriology is offered in response to a growing demand for laboratory technicians in departments of public health, municipal water and sewage plants, hospitals,

milk plants and others in which training in both home economics and bacteriology is desirable. It includes courses in microscopic anatomy, public health administration, bacteriology for health officers, food, medical and dairy bacteriology, and rural hygiene.

The American Association of Agricultural Colleges and Experiment Stations will hold its annual meeting in Chicago Nov. 12, 13, and 14, with headquarters at the Auditorium Hotel. There will be a meeting of the Council of the American Home Economids Association on Tuesday evening November 11.

Notes. The Home Economics Department of the University of Chicago is to have this year, for a practice house, the use of a good-sized dwelling owned by the University. Alumnae will recall the house on Kenwood Avenue opposite Belfield Hall.

Peabody College, Nashville, Tennessee, announces the following correspondence-study courses in home economics: Nutrition, Household Management, Principles of Sewing, Clothing for Children, Problems in Sewing for the Grades. These courses may be counted toward a degree.

In addition to its regular courses in home economics, Massachusetts Agricultural College offered, this past summer, elective courses in Organized Play and Recreation, Health and Sanitation, Food Preservation, Boys' and Girls' Club Work, Education, Horticulture, Agriculture, Practical Arts.

Charles Cooper, who for some years was editor of the "Epicure" has resumed the editorship of the "Table," a weekly publications on foods and similar matters, of which he was editor some thirty years ago. The "Epicure" which was discontinued, owing to war conditions in London, will probably not be revived.

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OFFICE OF HOME ECONOMICS: SOME RESULTS OF THE WORK CARRIED ON DURING THE FISCAL YEAR, 1918-1919¹

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Chief, Office of Home Economics

During the last fiscal year the work of the Office of Home Economics has increased very greatly. This is due largely to the growth of experimental and research work and to the more extended coöperation with the other branches of the States Relations Service and other bureaus of the Department of Agriculture as well as with other governmental and nongovernmental organizations, including the American Home Economics Association. As the records of the office show, there were 39 employees in July, 1918, this number decreasing until December 1 when the total numbered 27. From this date there was a gradual increase of workers in home economics projects until a maximum of 62 was reached about May 1. The increase was due chiefly to the fact that the Bureau of Markets coöperated with the Office of Home Economics in the war emergency dietary survey.

Considerable attention has been given during this year to matters of organization and to systematic classification and arrangement of manuscripts, pamphlets, and other valuable material forming a large collection of home economics data. Mr. J. A. Fray has given special attention to the problems of organization and similar work.

The equipment of the experimental kitchen has been increased to include stoves of different types and a very complete self-operating

¹ Presented at the Twelfth Annual Meeting of the American Home Economics Association, Blue Ridge, North Carolina, June, 1919.

refrigerating plant and cooling box, as well as many smaller household conveniences. This means that a great variety of household conditions can be duplicated in experimental work under controlled conditions, a matter of decided importance in making generalizations for housekeepers. In such work the Offices of Extension Work in the South and in the North and West have coöperated. Another feature of the experimental kitchen is the demonstration laboratory where instruction can be given to extension workers and others as occasion demands.

Work of the Experimental Kitchen. Early in the fiscal year, Dr. Minna C. Denton assumed direction of the experimental kitchen and under her supervision such problems as the following have been studied.

Experimental studies of yeast breads which comprised (a) effect of kneading by hand for different lengths of time, on bread, made with and without "substitute" flours; (b) comparisons between "straight dough" breads (all wheat) incubated at different temperatures under controlled conditions; (c) study of recipes for homemade yeast starters.

Studies in fuel conservation with gas range, involving measurement of gas consumption during ordinary household processes; varying details of construction as exemplified in ranges offered for sale in city shops; management in top-burner cooking; use of various commercial devices for saving gas while cooking; management of oven; use of small cover over top-burner; oven temperatures suitable to produce satisfactory butter cakes of different sizes and of different composition, pastry shells and filled pies, bread, biscuits, muffins, puddings; comparison of temperature-and-time curves for these various products in ovens of different construction, as those of coal range, different gas ranges, electric range; determination of temperature in center of mass when product "is done," for batters and doughs with and without eggs, for egg dishes without flour, for vegetables.

Problems of fruit jelly making, such as (a) yield in jelly (volume and weight) per pound of fruit, when different common home procedures are followed; (b) descriptions of a pectin test suitable for the housekeeper's use; (c) boiling point of various jellies when "done;" (d) use of pectin extracts and various acids to improve yield under certain conditions; (e) use of other sweeteners than granulated cane sugar in jelly making (e.g., commercial glucose sirups, homemade invert sirups).

Studies in pastry making, including (a) amount of various other fats (oils, rendered suet) to be substituted for $1\frac{1}{2}$ ounces of lard, in various recipes for pastry shells; (b) optimum amount of water to be

used with different amounts of each kind of fat; (c) temperature at time of mixing suitable for each fat and for water used and effect of temperatures of fat on economy in use of fat and on excellence of product; (d) effect of varying the details of manipulation at different stages of the process of pastry making, e.g., pounding instead of stirring the dough in mixing, ripening for different lengths of time.

Studies of the effect of varying manipulations of cake batter, especially as related to (a) variations in relative manipulations of ingredients, variations in kind of ingredients; (b) oven temperature during baking; (c) kind of utensil in which cake is baked (size, shape, and material); (d) some special study as to effect of amount and type of baking powder used, and manipulation of batter after baking powder is added.

A study of methods in household canning of vegetables and fruits, particularly the former; methods of cooking and using these products. The canning methods being studied include (a) old-fashioned hot pack "open kettle," with or without added vinegar; (b) one period cold pack, with various modifications (e.g., omitting cold dip, use of blanching water for canning, etc.); (c) intermittent cold pack or hot pack; (d) pressure steam (household canners and cookers); (e) relative amounts of solid and liquid in jar, with different kinds and combinations of vegetables, and different styles of pack, effect of these details on time required for penetration of heat to center of jar to a degree sufficient to attain sterilizing temperature.

Drying methods (with vegetables) studied touch such problems as (a) "high drying" (150°F. to 190°F.); "low drying" (110°F. to 120°F.); (b) blanching or not blanching, salt or plain blanch, different lengths of time of blanch; (c) different rates of velocity of air current.

Studies on cooking and use of dried products; (a) age at which various dried vegetables begin to fall off in flavor (no bacterial growth or "spoilage" having taken place); (b) ease with which the soaking process can be satisfactorily dispensed with in preparing for the table.

Work designed to facilitate progress in standardization of methods in experimental cookery has also been carried on. Outlines prepared include a list of variants and environmental factors concerning which observations must be made and recorded, in order to establish controlled conditions for various experimental batters and doughs (yeast bread, butter cakes, pastry shells and filled pies); for roasting and frying and sautéing processes; for observations on gas consumption during top-burner cooking and oven baking; for processes of canning and drying

and cooking of dried products; for juice extraction of fruits and jelly making. Score cards for all of these products have also been prepared.

A series of experimental custards was made, showing effect on curdling temperature of increasing amounts of sugar, of acid, and of soda.

Some studies have also been made on the effects of using soda and of acid (vinegar) on cooking beef, fish, carrots, peas, and spinach, as to color and as to relative degrees of tenderness.

Coöperative experimental work was undertaken with the Bureau of Chemistry. Recipes were worked out for using miso sauce and shoyu sauce, both of which are soy bean products; for home manufacture and use of sweet potato molasses; for home drying in specially constructed dryers; and for the cooking of dried vegetables.

At the request of the Bureau of Animal Industry comparative studies have been made of several fats used in pastry making, of the cooking qualities of mutton slaughtered by varying methods and of the cooking quality of pork from hogs fattened in different ways.

At the request of the Bureau of Plant Industry studies have been made of tomato seed and water melon seed oil and other by-product oils for table purposes.

Some of the studies referred to were of comparatively limited scope while others were much more extended and represent only a beginning in the study of questions which merit much additional research.

Immediate application has been made of the results of much of the work and in some cases results have been published. Reports of several of these studies have appeared or are soon to appear in the JOURNAL.

During the influenza epidemic regular work in the experimental kitchen was temporarily suspended in order that foods might be prepared in quantity as a part of the relief work of the District of Columbia.

Meal Planning. Miss Caroline L. Hunt, in charge of work in dietetics and meal planning, having worked out and proved a formula by which the food value of a list of foods can be calculated quickly and easily, has been applying it to the solution of various problems. A bulletin entitled "The Family Food Supply," which includes directions for computing food values according to the formula, is ready for publication. Blanks for recording foods as they are purchased or brought into the house have been prepared for use in connection with the bulletin. A series of colored charts is being prepared also, which supplements the food and diet charts published by the Department of Agriculture

several years ago. These new charts show graphically the principles of the wise selection and combination of food materials. For the convenience of extension workers and teachers, as well as housekeepers who are especially interested in the question, a brief summary is being prepared which gives the essentials of the quick method of calculating food values and also shows how this method can be applied in the preparation of exhibition material, either permanent material such as photographs and charts, or temporary material such as displays of foods, meals, or rations. A circular dealing with this topic is being prepared.

Family Survey. The war emergency dietary survey, undertaken in coöperation with the Bureau of Markets, has been continued under the immediate supervision of Miss Elizabeth Koch and Miss Isla Willoughby, with Miss Lucy Gillett as consulting expert. Home economics workers, housekeepers, and managers of public institutions have shown the same patriotic spirit in this work that was evident in so many other enterprises, and through their efforts about 2000 dietary records, each covering a period of 7 days, have been received representing 46 states and 16 nationalities. Of these, 1425 are family and 575 institutional studies. About 20 per cent of the family studies were made in rural districts—among farmers' families; 80 per cent in urban districts; one-eighth of the latter in families of laborers and seven-eighths in families of professional men.

A summary of the results of 500 family dietaries has been completed. The average size of the family in these 500 studies is 4.9 individuals, equivalent to 3.6 men. They represent 46 states and 16 nationalities, and are divided according to occupational grouping as follows: families of mother wage earners; men at light work; men at moderate work; laborers; retired men; mechanics; professional women and students; clerks; merchants; male teachers; professional engineers; professional men; salesmen; and farmers. The average income of the families in these groups ranged from \$754 for mother wage earners to \$2924 for salesmen. Excluding the groups of farmers, whose incomes could not be stated with accuracy because they did not take account of home-grown products, the average income of all groups was \$1905. The average cost of food per man per day was 46 cents, with an average return in food value of 3225 calories, 96 grams protein, 118 grams fat, and 445 grams carbohydrate; of the total energy protein furnished 11.9 per cent, fat 33 per cent, and carbohydrate 55.1 per cent. These fig-

ures are in fairly close accord with the requirements of the dietary standard used in discussing such questions. A comparison has been made between the cost, energy, and protein of the chief foods of animal and vegetable sources, and the results show that greater economy might be secured by the more abundant use of foods of vegetable origin, especially cereals. An average of 47 calories per man per day for one cent was supplied by animal food, while the average per man per day obtained for one cent from vegetable food was 98 calories. Vegetable and animal foods each contributed an equal amount of protein to the diet.

A comparison of the foodstuffs purchased by the present 500 families with the amounts of these same foods purchased by 400 families about twenty years ago, shows that the amount of meat in the diet has decreased about 8 per cent, and grain products about 11 per cent, while dairy products have increased about 6 per cent, vegetables 4 per cent, and fruits 8 per cent. The average amount of meat and fish supplied in the diet in the 500 studies was about 6 ounces per man per day, dairy products 16 ounces, grain products 13 ounces, vegetables 16 ounces, fruits 9 ounces, sugar and sirups 3 ounces, and fats 2 ounces. Although milk has increased to 14 ounces, or a little more than $\frac{1}{2}$ quart, it might be used yet more freely to good advantage. It is a noticeable fact that the amount of milk did not increase in accordance with the greater number of children in the families, which indicates that the importance of a generous supply of milk for children was not realized.

Judged by these studies as a whole, the average diet seems to be adequate; nevertheless, the fact remains that individual food habits need to be corrected, because out of 500 family studies, one-third were getting less than 88 grams of protein and 3000 calories of energy, amounts which are considered by some the minimum allowance desirable.

Since physiological well-being is dependent upon an adequate supply of certain inorganic salts, the mineral content of the dietaries has been taken into account also and particularly calcium, iron, and phosphorus, experimental studies having shown that these mineral elements are those most likely to be deficient in the average dietary. The values proposed by Sherman (calcium 0.68 gram, iron 15 mgm., and phosphorus 1.32 grams per man per day) have been adopted as a basis in judging the dietaries. As shown by records now completed for 200 of the 500 families, it appears that 40 per cent of them fall below the standard for iron, 23 per cent below the standard for calcium, and 22 per cent below

the standard for phosphorus. Judged by these figures, the average dietary is more apt to be deficient in iron than in calcium or in phosphorus. The data summarized thus far indicate that milk and other dairy products supply the greatest percentage of calcium; vegetables and grain products, the greater percentage of iron; and dairy and grain products the greatest amount of phosphorus, and in each case at the lowest cost.

The amount of information collected regarding group feeding is relatively large. Most of the principal types of institutions are represented in the records of 575 studies on hand, including boarding houses, college commons, club houses, orphanages, homes for the aged, reformatories, and prisons. The interpretation of the results of these institution dietaries is being continued and a summary of results is being prepared for publication.

Under the immediate supervision of Miss Ilena Bailey, the results of her survey made in 91 farm homes in St. Joseph County, Michigan, to secure statistical and other information pertaining to a number of problems of household management and household labor, have been tabulated and critically studied. The survey which was made just before the United States entered the world war had to do with phases of farm home life, i.e., social questions, economics, household labor, and household equipment. The area studied is typical of the East-North-Central States in the proportion of tenants, the size of farms and the type of farming. One might, therefore, assume the farm home life to be typical also for this region.

A general question asked the farm women was their opinion regarding farm life. It is interesting to find that 76 per cent of them preferred farm life to that of town or city, although some objected to the hard work on the farm, or said that farm life was too confining. Another important point brought out by the question, "What improvements do you desire in the community?" was that 41 per cent of them desired none, while the remainder desired improvements in roads, schools and churches, and general social life. It would seem fair to say that many of the women had not yet been awakened to the possibilities of community advancement.

To the question "What improvements do you want in your home?" 6 had no desire for any improvement, while 60 to 70 per cent wanted electric lights, furnace heat, running water, and bathroom. To students of home economics it will be interesting to know that 24 per cent

wanted repairs or additions to houses and 6 per cent desired new furnishings. The houses averaged eight rooms and the families including regular hired help averaged 4.1 persons so that there was no crowding except such as was done for convenience and economy in heating.

Only one-fifth of these farm women had hired help at any time, two-thirds depended upon the help given by members of the family and one-tenth stated that they had no help. The average length of a farm woman's day in this locality was 13 hours in summer and 10 in winter. This includes time spent at meals. They estimated that they had $1\frac{1}{2}$ hours of leisure daily in summer and $2\frac{1}{2}$ in winter. More than one-fourth of the women took no pleasure trips by automobile or train during the year, the others took trips averaging 55 miles. On only three farms did the men have the entire care of the poultry, while 69 per cent of the women cared for it all of the year. In two of the three areas 72 per cent of the women helped all or a part of the day with farm work during the busy season. The average number of days illness per family was $39\frac{1}{2}$ days, 15 days of this being ascribable to chronic illness of aged persons in the family.

To those who are interested in getting the results of research work in home problems to the women, it is important to know that 96 per cent of these homes subscribed for newspapers (usually a local paper), and that fully half subscribed to some daily paper. Agricultural papers were next in popularity and then came women's magazines which were taken by 69 per cent. From this there was a big drop to the 19 per cent who took general magazines.

To those doing field work it is of interest to know that 23 per cent of these farm women were not members of any social or study club, canning club or other organization; that 32 per cent were members of one club, usually a church society or aid society; and that 45 per cent were members of two or more clubs.

Some of the most important points shown by the economic data, for these prewar conditions, are as follows: Cost of clothing per family, \$114.00; per person, \$33.00; 89 per cent out of 27 reported depended upon the "butter, poultry, and egg money," to pay for the food purchased, household supplies, and part of the family clothing; only 6 out of the 69 reporting had a bank account separate from that of the husbands for household expenses. These are only a few of the points covered. It is expected that the data will be published as a department bulletin in the near future.

Miss Bailey also completed a report regarding results of home administration work carried on in coöperation with the Office of Extension Work in the North and West previous to the farm home studies referred to above and has coöperated in an experimental study of the possibilities of a loose leaf handbook designed to keep extension workers supplied with up-to-date information on topics of special interest to them.

Experimental Studies of Digestion. The experimental studies of digestibility of foods of different sorts have been continued and have included about 130 individual tests. Mr. H. J. Deuel has charge of the details of the experimental work and has had the benefit of the advice and experience of Dr. A. D. Holmes, who had charge of the work until December, 1918, when he left the Department of Agriculture to take up other work. A list of the year's publications reporting work on the thoroughness of digestion of various foods is included below (page 529).

Research Work in Calorimetry. The research work with the respiration calorimeter has been carried on as heretofore under the immediate supervision of Mr. H. G. Barott. A report has been prepared for publication summarizing experimental data accumulated in the study previously referred to² of energy expenditure for household tasks. Continuation of this work was postponed in order that investigations might be carried on, in coöperation with the Bureau of Markets of the Department of Agriculture, to obtain data regarding the specific heat of fruits and vegetables in original containers, a kind of information needed for the discussion of problems concerned with the commercial storage of such products. The work was done with a well known market variety of apples in original barrels and some interesting results were obtained. Since values for specific heat were desired over a comparatively wide range of temperature, e.g., from room temperature to those used in commercial storage, the system for cooling the calorimeters had to be redesigned and modified to include low temperature which had not been required in kinds of work previously undertaken. Although too limited as yet for general deductions regarding the absolute relations between temperature and specific heat or energy elimination the results obtained in this series of studies with apples are of decided interest and were useful for the special purpose for which the work was undertaken. The following may be taken as a tentative average value for the specific heat and energy elimination of York Imperial apples, No. 1 quality,

² *Jour. Home Econ.*, 11 (1919), No. 1, p. 13.

over a range of temperatures from 10°C. to 30°C. Specific heat of fruit and containers 0.93 as compared to water at 1 per cent; and energy elimination of fruit $\frac{1}{2}$ calorie per hour, per kilogram of fruit. This work is closely related to a study previously undertaken, in the respiration calorimeter laboratories, of the gaseous exchange and heat elimination of fruits and vegetables after maturity, due to the enzymic or other action which takes place during ripening, decay, and the intervening period. A report of such work, previously published,² giving data on the energy elimination and gaseous exchange of ripening bananas shows that the results obtained with the apples are directly comparable with those previously determined. The same can be said of results not yet reported which were obtained with pineapples during the active ripening period which they undergo after shipment for market.

Because of war emergency conditions it was not possible to continue the respiration calorimeter studies, undertaken in coöperation with the Bureau of Entomology, of methods and conditions attending the wintering of bees. However, some special apparatus necessary for the work was constructed and assembled and everything is in readiness for the continuation of this work, unless unforeseen contingencies arise.

The war emergency situation also prevented continuation of work on a line of investigation which promises valuable results, namely the gaseous exchange and energy elimination of hens' eggs during the incubation period. It is hoped that the plan previously formulated for the continuation of this work in coöperation with the Bureau of Animal Industry may be continued.

It is perhaps of interest to know that the experimental studies referred to above have demonstrated the suitability of respiration calorimeter methods for the experimental study of new lines of agricultural research, namely, problems related to the bee keeping industry and the wintering and handling of bees, and many problems of plant life.

Editorial Work and Publications. The preparation of material for publication has been under the immediate supervision of Miss Helen W. Atwater. At different times during the year, the Office of Home Economics has been fortunate in having the temporary editorial assistance of Mrs. Sara Mundo of Pittsburgh; Miss Elizabeth Bower, formerly of the State College of Agriculture of Pennsylvania; Mrs. Lillian Wilcox Hershey, of Indiana; Miss Mabel Wellman, Head of the Home Econom-

² *Department of Agriculture Yearbook*, 1912, pp. 293-308, "Some Results in Studying Ripening Bananas with the Respiration Calorimeter."

ics Department of the University of Indiana; and Miss Ruth Van Deman, of the Editorial Office of the College of Agriculture, Cornell University.

Since, in general, publications lag behind the work on which they are based, a list of those for a given year deals more with past than with present conditions. This is perhaps especially marked in the current year, which, as far as popular and emergency work is concerned, is divided by the armistice into two somewhat distinct parts. Up to November, 1918, precedence was given to material which would aid in conservation of food, fuel, and the other articles made scarce by the war. Since that time much material of that kind has lost its significance and either has been held back from publication or its "slant" is being changed to make it of greater value under present conditions.

The papers prepared here for publication through the Department fall into three general classes: (1) Professional or technical papers, which appear chiefly as Department Bulletins for limited free distribution and for sale at a nominal price; (2) more popular papers published as Farmers' Bulletins and circulars and intended for wide free distribution; and (3) brief popular articles supplied to the Office of Information and used by it in the publicity work of the Department.

During the year the following technical bulletins representing the work of the digestion laboratory have been submitted for publication: U. S. Department of Agriculture Bulletins Nos. 613, "Digestibility of Certain Miscellaneous Animal Fats;" 717, "Digestibility of Protein Supplied by Soy Bean and Peanut Press-cake Flours;" 751, "Experiments on the Digestibility of Wheat Bran in a Diet Without Wheat Flour;" 781, "Digestibility of Some By-Product Oils;" and "The Effect of Milling on the Digestibility of Black-hull Kafir in Comparison with Corn," and "Digestibility of Water-ground Buckwheat."

Bulletins on the following subjects have been prepared and await publication: "The Digestibility of Certain Hydrogenated Oils;" "The Digestibility of Certain Miscellaneous Vegetable Fats (Cohune, Palm Kernel, Hemp-seed, and Poppy-seed Oils, and Avocado and Cupuassu Fats);" "The Digestibility of Wheat Flours of Different Sorts;" "The Digestibility of Certain Meats (Horse, Corned Seal Hams, Kid, and Rabbit.)" Reports of experiments in food preparation are referred to elsewhere (page 522).

The list of Farmers' Bulletins prepared in the Office of Home Economics is shorter than in some years, partly because of delay due to the

necessary recasting of material since the cessation of hostilities, and partly to the fact that much of the time of the editorial force has been required for coöperative work with other bureaus and departments. Farmers' Bulletins on the "Family Food Supply," on "Rice," on "Fish," on the "Care and Selection of Clothing," and on "Home Laundering," and revisions of earlier bulletins are now on their way through the press.

Circulars have been issued on such emergency subjects as "Cornmeal and Corn Flour to Save Wheat;" "Rice Flour to Save Wheat;" and "Oats to Save Wheat."

The Office of Home Economics has contributed over fifty brief, popular articles on a variety of home economics topics to the Department's weekly syndicate service furnished to the newspapers through the Office of Information and has also prepared many news items for the Weekly News Letter sent out by that office. This material has been prepared chiefly by Miss Louise Pritchett and later by Miss Ruth Baird.

Coöperation with other Departments and Outside Agencies. One important part of the work of the Office of Home Economics is coöperation in the preparation of material needed by other branches of the States Relations Service. Examples of this are seen in such publications as Farmers' Bulletin 955, "Use of Wheat Flour Substitutes in Baking," prepared by Miss Wessling of the Office of Extension Work in the South, in coöperation with the Office of Home Economics, and in several mimeographed circulars for the boys' and girls' club work and other work of the Office of Extension Work in the North and West, including one entitled, "How to Dress Well at Small Cost," now being printed as a Department circular.

Aside from the coöperation with other branches of States Relations Service, this office, in accordance with the general policy of the Department, submits its manuscript to other bureaus dealing with related subjects, and goes over those touching on home economics subjects prepared by other bureaus.

In a similar way it has been called into consultation by the Federal Board for Vocational Education regarding a bulletin giving a course of lessons on the "Choice and Preparation of Food," and is at present coöperating with the American Red Cross in the preparation of its forthcoming outline lessons in home dietetics.

A coöperative publication issued within the year is the course of lessons entitled "The Day's Food in War and Peace." This was pre-

pared by the Food Administration, the Woman's Committee of the Council of National Defense, and the Department of Agriculture, acting together. The remainder of the edition is now in the Office of Home Economics and copies may be obtained by application to the Department.

There has been more or less formal coöperation and a free exchange of notes on material between the Office of Home Economics and branches of the Department of Labor and Department of War, which were especially interesting. There has also been some coöperation between the Office of Home Economics, the War Labor Board, and the Bureau of Naturalization of the Department of Labor.

The coöperation with the Woman's Committee of the Council of National Defense, begun in August, 1917, was continued until the autumn of 1918, when the Washington force of the Woman's Committee was amalgamated with that of the State Councils Section to form the Field Division of the Council of National Defense.

Miss Atwater had been serving as Executive Chairman of the Department of Food Production and Home Economics of the Woman's Committee and had been gradually extending her work to include thrift in fuel, clothing, and other materials, as well as in food. She was therefore assigned to the Federal Agencies Section of the Field Division of the Woman's Committee and given charge of its work in general thrift. Since the armistice, the work of the Field Division has, of course, gradually lapsed though the skeleton of the organization still remains.

One feature of the work of the Woman's Committee of special interest to home economics workers, in which the Office of Home Economics participated, is a "Survey of Agencies for the Sale of Cooked Foods Without Profit." The survey was made by Dr. Iva Lowther Peters and the report was published early in 1919. Copies may be obtained on application to the Council of National Defense, Washington, D. C., or to this office.

A piece of coöperative work of special interest has been undertaken with the Savings Division of the Treasury Department. When plans were made for the educational part of the thrift campaign which the Savings Division of the Treasury Department is conducting, coöperation with the Department of Agriculture was requested by the Treasury Department, with the result that the Office of Home Economics was called into consultation and coöperation. Miss Atwater represented this office. Dr. Benjamin R. Andrews, of the Savings Division

of the Treasury Department, Mrs. Alice P. Norton, and Miss S. Maria Elliott represented the Treasury Department.

Aside from aid in bringing the thrift work of the Department of Agriculture and especially of the Extension Services into line with that of the Treasury, the most important phase of this coöperation has been the preparation of a series of twenty U. S. Thrift Leaflets. These are similar in size to the U. S. Food Leaflets and are published by the two Departments jointly. To assist in their preparation, the Office of Home Economics had the good fortune to secure the services of Miss Sarah MacLeod of Pratt Institute. The titles are: Is Thrift Worth While; Seven Steps Towards Saving; Clothing for the Family; Saving Time and Money by Simple House Cleaning; Saving Labor and Materials by Easier Laundry Methods; How to Remove Stains; Take Care of Your Clothing; Saving Materials and Money by Special Cleaning; Thrift in Lighting; Thrift in Choice, Care, and Use of Kitchen Utensils; Saving Fuel in Heating; Saving Fuel in Cooking; Saving Food by Proper Care; Inexpensive Ways of Keeping Food Cool; How Shall We Choose Our Food; The Weekly Market Basket; Thrift for the Farm Home; Home Thrift for Children; Business Methods in the Home; Thrift Accounts for Boys and Girls.

These leaflets may be obtained in small quantities from the U. S. Department of Agriculture. Large orders should be placed with the Regional Directors of the Federal Reserve Banks.

As is the case with other Government activities the Office of Home Economics reaches the public not only through Department bulletins and other publications, but also by correspondence, conferences, and similar ways. This feature of the work, which has grown rapidly, has been systematized and it may fairly be regarded as one of its most interesting as well as useful functions, because in this way it is possible to secure direct contact with individual housekeepers, teachers, extension workers, and others. The importance of this contact, which was demonstrated during the war emergency situation, has also been noted during the changing conditions which followed the signing of the armistice and it is planned to shape experimental and research work and other activities to contribute to the solution of the problems which will arise after peace is assured.

A COURSE IN TEXTILE SHOPPING

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Outside of the buying of materials for the laboratory problems, the average student in clothing courses knows very little about shopping. Even students who are fairly good shoppers for themselves know little about shopping for other members of the family; still fewer can shop with limited means. Textile courses, like textile text books often deal too much with technical processes, cultivation, preparation, and manufacturing, and not enough with the side in which women should be most interested—the marketing, retailing, and buying of the products of the mills, factories, and shops. An attempt has been made in the textile course here described to place the emphasis on the buying of clothing and household textiles.

The aim has been to make the student conscious of woman's great responsibility as the chief spender of the family income, and especially to make her realize, as the purchaser of textiles and clothing for the home, the need of preparation for intelligent buying. The previous knowledge of the students in regard to textiles and the economics of buying and selling has been brought together and applied to this problem. An attempt has been made to stimulate the student to ascertain the facts concerning the present facilities and future possibilities of the shops in order to establish a better spirit of coöperation between consumer and dealer, and so develop better shopping habits.

It is generally admitted that the successful shopper has a definite idea of what she wants before approaching the saleswoman; asks for the desired article in a definite way, that the clerk may waste no time in finding it, as, for example, "Please show me a pair of full fashioned fine hisle stockings, brown, number 9½;" and is reasonable in requests to have goods taken down from the shelves when she really does not intend to buy. Leeds in his "Household Budget" says, "Much time idled away in so called 'shopping,' if considered in the light of diversion, is no more wasteful of one's leisure time than is card playing or gossiping, but, if considered from the standpoint of using up time needed for productive work, must be regarded as an extravagance which many who indulge in this custom can ill afford."

Much time is wasted not only in the way Leeds has here suggested, but in other ways. The woman who sits down to make an apron and finds she is out of thread, or picks up her mending and fails to find the darning cotton of the right color, or begins her weekly mending and finds she has no buttons to replace those that have been taken off in the laundering, must either go or send for the supplies she wants or substitute some other work, and this time is wasted or her work is disorganized.

Such an individual has not formed the habit of systematically buying in quantities such staples as cotton and silk thread in black and white, bias tape, darning cotton in the colors most used, pearl buttons in several sizes, and other materials in constant use. Where clothing is made at home, using the same size and style of pearl buttons as far as practical on all garments would eliminate the problem of matching buttons at mending time.

Staple materials that require no judgment in selection may be ordered by telephone and this is often a saving of time. Care should, of course, be taken not to request the delivery of small amounts of inexpensive goods.

The five questions which naturally arise in connection with buying—why, what, when, how, and where—were taken as the basis of the general outline of the course. The first three questions relate definitely to the consumer and her needs, the last two show the relation between the consumer and the dealer.

In connection with the first question, *why buy*, the girls through discussion and answering questions, were taught that there must be a reason back of all buying, and to the extent that the reasons for buying are valid to that extent the buying is justifiable. An analysis of their own buying led to the conclusion that much of the extravagance in buying is due to the fact that there is no need for the article purchased. It is bought because it is cheap, because it is the latest thing, fashionable or exclusive; because the saleswoman said it was "so becoming" or because our friends will note the costliness of the purchase; not because the article is really needed. When purchased from any of these motives it often hangs in the closet or lies in the drawer and is never worn, because the design or color is not becoming, or the color does not harmonize with the rest of the wardrobe, or the material is too coarse.

Then the class discussed the basis for the decision *what to buy*, bringing out the idea that the solution lies in the shopper's own judgment,

based upon her experience and that of her friends, or the judgment of the salespeople, and that neither of these can be taken as infallible. With the training for greater efficiency in buying, given by the home economics courses for the shopper, and the new and rapidly developing field of study for training salespeople, there should result a combined judgment that will greatly simplify the problem of the textiles and clothing purchase.

Standard goods versus season novelties was the chief line of study under what to buy, including both materials by the yard and ready made garments, considering design, texture, and color. Under ready made garments, underwear, both knitted and muslin, hosiery, shoes, gloves, and corsets were considered.

Styles were discussed in connection with novelties, the setting of styles, their adoption and their influence upon the making, selling, and buying of cloth and of ready made garments. A study was made of two movements that are coping with the evil results of the constantly changing styles—that of standardizing dress, using the term in its broadest meaning, that of simplified dress, not a uniform type; and that of the adoption of American fabrics and designs which will free from the hypnotic influence of the word “imported.”

When to buy included discussions of the advantage and disadvantage of buying at the beginning of the season, during the season, and at the close of the season; the regular yearly sales; legitimate and illegitimate sales; and the great need of exercising judgment in buying at sales.

How to buy included information concerning personal and catalogue shopping and experience in both. The subject matter involved was the psychology of shopping, courtesy of shoppers and their treatment of salespeople, and treatment to be expected by shoppers; the abuse of the returned goods habit; methods of payment, advantages and disadvantages of cash and charge accounts (including how to open accounts), and the installment plan. In catalogue shopping the necessity for accuracy in filling out order blanks was emphasized by actually filling out blanks until skill was attained. Methods of sending money were also discussed.

It was recommended that girls take advantage of every opportunity to become saleswomen, were it only for a short time, since in this way they may gain two things which come only from experience, namely: they see the shopper from the sales person's point of view, and they learn the sales person's problems and so are less apt to be unreasonable in their demands as a shopper.

In discussing the question of *where to buy*, the girls were encouraged to patronize their home dealers first, but not to be limited or prejudiced by them. If they cannot get the best values and prices in their home towns then trade elsewhere, at department stores and specialty shops in the nearby city, or at mail order houses, considering, of course, the time and expense in shopping out of town and the expense of express and postage in trading by catalogue.

The course was given in the form of lectures and laboratory work; the latter consisting of individual problems for the student to work out. Each student was given a special subject for study; for example, one student was given the subject of hosiery. The local dealers loaned us a full line of hosiery, the cheaper cottons, finer lisle, and various grades of silk in as many makes as they carried. The class spent one laboratory period in the study of stockings, comparing the various makes as to shape and style (full fashioned, seamless, and seamless fashioned), price, quality of yarn, weight, and length of guarantee. The student then went on independently with her problem which was to find out the makes which would render the best service, and she asked some of the faculty members and students if they would be willing to test out these stockings by wearing them and giving her the results of their test along the lines of fading and shrinking with laundry, holding their shape, and length of time worn before holes or runners appeared.

Other similar problems were the testing of draperies, gingham, and printed voiles as to fading in sun and in laundering. Those that faded in laundering were also tested by setting the color and then laundering and the result compared to the first test.

Comparisons were made between ready made garments and the garments made by the various sewing classes, including wool skirts, silk blouses, white wash skirts, voile dresses, and children's garments, in order to establish standards by which judgments might be formed in regard to design, price, materials, and construction.

Each girl received at different times shopping assignments. They included the buying of garments for various occasions and for various ages—the child in the kindergarten, in the grades, in the high school, and in the college. At one time the students shopped for material by the yard and brought to the laboratory a tracing of the appropriate design, together with the samples of materials chosen, both materials for the garment and the trimmings and accessories. For example, the girl who had a summer travelling dress for a college student as her

assignment, selected a soft navy blue silk for the dress and several samples of organdy and linens in harmonious colors for different cuff and collar sets which could be easily attached and would give the costume a fresh look. These purchases were brought to the laboratory and the girls gave their reasons for the selection of design and material and the reasons were discussed by the class.

The second problem was shopping for ready made garments of various types. Arrangements were made with the local merchants by which these garments were brought to the laboratory for class discussion.

In connection with their special topics the students sent out several questionnaires. One girl had "Shopping in the Small Towns" for her topic, and she arranged with all the class members to send blanks to their home firms all over the state asking questions in regard to the merchandise carried. For instance the firms were asked to name in order of the best sellers the makes of hosiery for adults and children, shoes for adults and children, corsets for adults and juniors, knitted underwear, gloves, sheeting, pillow case tubing, muslin, table linen, rugs, and draperies. One blank space was left for the merchant's comments as to the good features of the merchandise carried. He was also asked what ready made garments were carried.

Another special topic was "How Clothing is Purchased." A questionnaire was sent to the mothers of the students, and to the faculty women, asking them to list the garments both for children and adults that they bought ready made, hired made outside of the home by dress-makers, hired made in the home by seamstresses and had made by members of the family. They were also asked whether they bought the following articles ready made, or made them at home and why—curtains, sheets, pillowcases, towels, comforters. The questionnaire included the following questions: "What kind of a rug have you found most serviceable in your living room?" "What drapery materials (give trade name if possible) have you found most satisfactory?" Very good responses to these questionnaires have been received and some valuable information was available when they were tabulated.

The special reports were given at the end of the term, each student giving her report before the entire class, so that every girl might have the benefit of all the reports. Each student obtained as much information as possible based upon practical experience from the questionnaires and from inquiries among her friends besides that from the experimental work done in the laboratory. She kept up with market

conditions and prices, and advertising materials in the textile and trade magazines, such as *Dry Goods Economist*, *Merchants Trade Journal*, *Textile World Journal*, and *Women's Wear*. From all of this knowledge the student formed her judgment, and the summary of her report was given in such a form that the others of the class could tabulate it in the following outline:

Textile knowledge

| TRADE NAMES | MATERIALS | | | | | PRICES | | STOCK SIZES | DESIGN | | | |
|-------------|-----------|--|--|--|--|----------|------------|-------------|--------|--|--|--|
| | | | | | | Per yard | Ready made | | | | | |
| 1..... | | | | | | | | | | | | |
| 2..... | | | | | | | | | | | | |
| 3..... | | | | | | | | | | | | |

Wearing quality

| LENGTH OF SERVICE | SHRINKAGE | FADING | | | CONCLUSIONS |
|-------------------|-----------|--------|---------|----------|-------------|
| | | Light | Laundry | Crocking | |
| 1..... | | | | | |
| 2..... | | | | | |
| 3..... | | | | | |

Where to buy

| DEPARTMENT STORES | | BASEMENT STORE | SPECIALTY SHOP | CHAIN STORE | MAIL ORDER HOUSE |
|-------------------|------|----------------|----------------|-------------|------------------|
| Small town | City | | | | |
| 1..... | | | | | |
| 2..... | | | | | |
| 3..... | | | | | |

When to buy

| FALL | WINTER | SPRING | SUMMER |
|--------|--------|--------|--------|
| 1..... | | | |
| 2..... | | | |
| 3..... | | | |

Since some definite form was needed for keeping data, easily accessible, convenient, and eliminating the taking of many notes, the above form for tabulation was worked out as a class problem. The out-

line was made to include tabulation of materials on any article of wearing apparel that might be studied. Under material the spaces were left blank to be filled in by the student. If table linen was the subject for data, she would write linen, union, mercerized cotton; if a ready-made garment, to these might be added silk, wool, and artificial silk; if shoes was the subject, patent leather, kid, or calf skin, and if hats, felt or straw. Under design the spaces were left blank for the same reason, that the same terms would not apply to all articles studied. Shoes would be classified as pumps, oxfords, boots; coats as tailored, semi-tailored; drapery material as plain, printed and woven, and so on.

Numbers were used to indicate the various makes of the article studied. Hosiery, for example, would be written in the blank space under trade names; 1 might be Phoenix, 2 Eiffel, 3 Wayne knit, and in all of the outline the material under 3 would refer to Wayne knit hosiery.

The course was supplemented by outside lectures given by people directly connected with the trades. The proprietor of a leading shoe store gave two lectures on the buying of shoes. A buyer of linen for one of the largest department stores in the state gave a lecture on linen buying. The educational director from one of the largest state department stores gave a talk upon her work with the sales people in training them to "serve the shopper more efficiently." A corsetiere gave a talk on selecting and buying corsets.

From the visual instruction department were secured a number of moving pictures on such subjects as "the making of shoes," "gloves," and "laces, both machine and handmade." The class visited several factories and mills—a hosiery mill where seamless stockings were knitted; a woolen mill where mule spinning and weaving of plaid mackinaw materials were carried on, and a skirt factory where one saw every step in the designing, cutting, and making of wool and silk skirts.

When the trade magazines began to be so full of the subject of the revival of hand made and machine made laces and embroideries, and it was talked about to such an extent that one week was designated by merchants over the country as "lace and embroidery week;" when the *Dry Goods Economist* came out with a price list of laces on the market, which included, not only machine made and "real" Valenciennes, Chantilly, Torchon, Cluny, but also the hand made laces—Venetian point, Duchess, Limerick and Carrickmacross, the students found it quite worth while to spend some time studying laces, especially in learning to distinguish hand made from imitation, so that they might not be imposed upon by women who will again be going about with so called hand made laces.

As each year brings certain accessories to special notice, the time given to them will vary with the importance of the article.

As implied in the beginning of this article, it is time that our schools and colleges give information and skill which will function in better buying. The shopper must be as definitely trained as the salesman, and the training must develop judgment as well as give information.

It is the desire of the writer that this article may be freely discussed. Many other schools have given courses with the same aim, that of making better buyers, and it is hoped that they will give the readers of the JOURNAL the benefit of their experience.

STUDY OF COMPARATIVE WASTE IN A DINING HALL AND IN A CAFETERIA

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This study was made for the purpose of finding the relative economy of different methods of feeding students. Two types of service, a la carte and table d'hôte, were studied, with a cafeteria and dining hall as examples. The cafeteria serves faculty and college students. The dining hall serves students of the high school age and older. Both are located in the same building on the Agricultural Campus of the University of Minnesota. They are under the same management, with food of the same quality, purchased regardless of the institution in which it is to be used, kept in a common storeroom, and issued to the respective kitchens. The same recipes are also used in both institutions, though each kitchen employs its own corps of workers. The differences are that the same cooks are not employed in each; separate kitchens are maintained; and the rate of board in the dining hall is \$4.00 per week while the patrons of the cafeteria spend as much or little as they wish, the amount ranging from \$5.00 to \$6.00 per week.

The method of study was as follows. After the dinner had been served at night in the dining hall, two students¹ collected the waste

¹ Credit for this data should be given Fern Sewell and Elna Boss, students in the Institutional Management classes in the Division of Home Economics at the University of Minnesota.

from the tables. This waste was then sorted, in the way indicated in the following table, and weighed. In the cafeteria the same two students received the dishes from the noon meal, in the scraping room.

Table showing waste in the dining hall

| DATE 1919 | NUMBER SERVED | EDIBLE WASTE | | | | | INEDI- BLE WASTE | TOTAL WASTE | REMARKS |
|--------------|------------------|--|--------|-------|--------|---------------|------------------------|----------------|------------------------------------|
| | | Exclud- ing bread and but- ter | Butter | Bread | Total | Per person | | | |
| | | lbs. | lbs. | lbs. | lbs. | lbs. | | | |
| 2/17 | 336 | 2.5 | 0.375 | 1.375 | 4.25 | 0.0126 | | 4.25 | Chiefly chocolate pie |
| 2/19 | 334 | 12.5 | 0.375 | 1.375 | 14.25 | 0.0426 | 2.25 | 16.5 | |
| 3/5 | 320 | 8.75 | 0.125 | 2.0 | 10.875 | 0.0339 | 0.75 | 11.625 | |
| 3/6 | 309 | 17.125 | 0.375 | 1.25 | 18.75 | 0.0606 | 0.375 | 19.125 | Large amount of tomatoes |
| 3/7 | 311 | 8.25 | 0.25 | 1.875 | 10.375 | 0.0334 | | 10.375 | Considerable but- terscotch pie |
| Average.. | 322 | 9.825 | 0.3 | 1.575 | 11.7 | 0.0366 | 0.675 | 12.375 | |

Table showing waste in the cafeteria

| DATE 1919 | NUMBER SERVED | EDIBLE WASTE | | | | | INEDIBLE WASTE | TOTAL WASTE |
|--------------|------------------|----------------------------------|--------|-------|-------|------------|-------------------|----------------|
| | | Excluding bread and butter | Butter | Bread | Total | Per person | | |
| | | lbs. | lbs. | lbs. | lbs. | lbs. | | |
| 2/18 | 223 | 3.875 | 0.125 | 0.25 | 4.25 | 0.019 | 1.125 | 5.375 |
| 2/20 | 218 | 4.875 | 0.125 | 0.375 | 5.375 | 0.0247 | 0.375 | 5.75 |
| 3/4 | 212 | 3.625 | 0.25 | | 3.875 | 0.0182 | 0.75 | 4.625 |
| 3/6 | 205 | 4.0 | 0.25 | 0.25 | 4.50 | 0.022 | 4.0 | 8.5 |
| 3/7 | 199 | 4.125 | 0.125 | 0.125 | 4.375 | 0.0219 | | 4.375 |
| Average.... | 211 | 4.1 | 0.175 | 0.2 | 4.475 | 0.0212 | 1.25 | 5.725 |

The average waste per meal as shown by the above chart was therefore:

| | DINING HALL | CAFETERIA |
|------------------------------------|-------------|-----------|
| | lbs. | lbs. |
| Bread..... | 1.575 | 0.2 |
| Total edible waste..... | 11.7 | 4.475 |
| Inedible waste..... | 0.675 | 1.25 |
| Total waste..... | 12.375 | 5.725 |
| Total edible waste per person..... | 0.0366 | 0.0212 |

They separated and weighed each kind of waste as stated below. The noon meal was chosen in the cafeteria and the night meal in the dining hall because those were the two meals which were most nearly the same as to menu and number served.

Since the amount of butter served in the dining hall was limited, there was little wasted; hence it is impossible to make a comparative study of the waste in butter.

As the above tables show, the only instance in which the waste in the cafeteria exceeded that in the dining hall was in the case of the inedible waste. The explanation of this doubtless lies in the fact that steaks and chops were served in the cafeteria and were not served in the dining hall.

Using the cafeteria as a unit of comparison, the amount of waste is as follows:

The amount of bread wasted in the dining hall was 7.87 times as much as that in the cafeteria.

The total edible waste in the dining hall was 2.61 times as much as that in the cafeteria.

The inedible waste in the dining hall was .54 of that in the cafeteria.

The total waste in the dining hall was 2.16 times as much as that in the cafeteria.

The waste per person in the dining hall was 1.72 times as much as that in the cafeteria.

From the above, the following conclusions may be drawn:

1. The a la carte, in this case the cafeteria, type of service results in less waste and is therefore more economical.

2. Since the food was of practically the same quality in each case, it would seem that the greater percentage of waste in the dining hall is due to:

- (a) Lack of appreciation of food cost when students can have as much as they wish to eat at a set price.

- (b) Lack of responsibility toward waste.

- (c) The fact that the amount paid for board, which is almost a minimum, must cover not only food, as in the cafeteria, but service as well, limits to some extent the variety which may be served. This caused a certain unavoidable monotony in the menu which was not found in the cafeteria, where such things as head lettuce, new rhubarb, and cauliflower may be served and charged for according to cost.

FOR THE HOMEMAKER

THE PROBLEM OF THE HIGH COST OF LIVING

There was presented to Congress last August a report,¹ prepared by the Director of the Council of National Defense, containing a careful study of the reasons for the high cost of living, and some suggestions for remedial measures. The increase in cost is attributed primarily to four different causes: curtailment of production, hoarding of storage food products, profiteering, conscious and unconscious, and inflation of circulating credit. This problem is but one phase of the larger problem of readjustment under after-war conditions. It is so interrelated with other reconstruction problems that a full discussion of it would mean a discussion of the whole question of reconstruction. It is not a new problem nor a problem of transitory character; it will not in the natural course be outgrown and left behind as, with the passing of time, we get farther and farther away from the recently closed war. To some extent it was a pre-war as well as a post-war problem, but it has reasserted itself under conditions which have become aggravated. Not only have prices risen with increased rapidity during the war, but the public mind has also become more impatient and more accustomed to insisting that problems be met with solutions of a kind that bring tangible results.

While the cost of living is much talked about, its gravity is still but inadequately realized. It means a tendency toward the lowering of standards of living; it accompanies reduced production; it is a cause of the neglect to provide for future national requirements, as well as of other sorts of disorder in both private and public economy.

The fundamental basis for the maintenance of national standards of living is adequate production, economical distribution, and fair apportionment among the various economic groups which constitute society.

¹ Analysis of the High Cost of Living Problem. Submitted by Grosvenor B. Clarkson, Director of the Council of National Defense, to Secretary Baker, Chairman of the Council, and transmitted by him to the members of Congress. In this summary quotations have been made freely from the original report.

That America has the ability to produce enough goods to maintain and even increase the standard of living was shown during war time. Fair and equitable distribution of goods is a problem still unsolved. Production has in general been abnormally low since the armistice, except in the case of agricultural products. Food production was improved rather than injured during the war, and has continued to be maintained. Cereals, meats, and garden products are apparently adequate in supply.

The clothing condition is a very different one. When the war came to an end the supply of civilian woollens was unprecedentedly low, yet because of disagreement regarding prices and other matters by jobbers, manufacturers, and dealers, there has been much less production of woollen goods than last year. A similar condition is true in regard to the cotton industry. More spindles were idle in the first five months of 1919 than during the corresponding period for 1918. The production of boots and shoes for the first three months of 1919 was about 60 per cent below the production for the last three months of 1918. The output of civilian men's shoes fell off at least 25 per cent, and of women's shoes still more. When housing is considered it is also found that the industries whose activity is a prerequisite to building, such as brick making, lime, cement, and lumber production remained relatively inactive or tied up with strikes and labor disputes until late in the spring. It has been estimated that the United States was short a million homes at the end of the war. When railroad traffic is studied, when the coal situation is examined, and the iron and steel output investigated, similar results are found.

The increase in prices from July, 1914, to June, 1919, for all commodities taken together, is estimated at 107 per cent. Food, constituting from 35 to 45 per cent of the total expenditure of typical wage-earning families, increased in price 111 per cent, while that of cloths and clothing, about 15 to 20 per cent of the expenditure of the average wage-earning family, increased 150 per cent. Reliable figures showing the average increase in rents, 9 to 15 per cent of the expenditure, are not available. Fuel and light, amounting to approximately $3\frac{1}{2}$ to 7 per cent of family expenditure, show an increase of 80 per cent, and house furnishings, amounting to approximately 5 to 7 per cent of the expenditure, increased 131 per cent.

Increases in the prices of goods are relatively meaningless unless taken in connection with increase in incomes. Just how generally increase in

wages has kept pace with increased cost of living is not known. Studies lately completed by the Bureau of Labor Statistics will soon be available, but even then knowledge is lacking for earlier years. It must be remembered the only complaints of the high cost of living which have justification are those which are based upon inability of the present income to maintain previous or reasonable standards of living at present prices. The only well-founded complaints are those that mean that increase of income has not kept pace with increased cost of living, and that there is therefore an enforced reduction in standards of living.

In pre-war times every dollar finding its way to the market was supposedly the counterpart of some commodity also appearing in the market. Money expended for the purchase of food and clothing and for the payment of rentals was assumed to have been earned by some productive contribution to the general supply of commodities. With war and its non-productive activities funds appeared that implied no corresponding contribution to the market supplies of goods. With a decreased quantity of goods and an increased price, larger expenditures were demanded. Increased credit and increased circulating medium followed.

The only way to overcome this inflation of the currency is by increased production to create such a volume of commodities and wealth that the balance between physical goods and circulating medium may be normal.

The increased cost in clothing and housing is easy to understand because added to this effect of the inflation of the currency is inadequate supply and curtailed production. But this does not explain the cost of food, since the food seems adequate. Nor are present food prices to be accounted for largely on the basis of heavy exports, since these have declined rather than increased. There is an increase in the amount of goods in cold storage. A partial explanation why food prices are relatively high, in comparison with prices of chemicals, metals, lumber, and certain other goods whose supply is relatively small, may be due to a concentration of purchasing power upon food. There seems a tendency toward a demand for the necessities of life in the form of finished goods and the producers and purveyors of food can demand abnormally high prices regardless of the relative plentifulness of their goods. That is, the demand for such goods has increased out of proportion to the demand for other goods. This gives an opportunity for profiteering and for wasteful distribution. There apparently has been

an actual increase of middlemen. Yet we must remember that while to produce a very large crop and sell it at abnormally high prices is profiteering, it is after all a kind of profiteering that deserves unstinted praise in comparison with that other species which deliberately reduces output and charges extortionate prices that may more than make up to the producer for the portion of products withheld, or the hoarded goods condemned to spoil or be lost.

There is also unconscious profiteering. To take it for granted that increased wages, rents, or profits are permitted, whenever conditions permit an increase, whether or not the service rendered be increased or reduced, is one kind of profiteering. While increased money income for a given amount of service does not constitute profiteering unless the new money income will purchase more goods at the new price level, increased purchasing power with reduced service is the very essence of profiteering, and always means the deprivation of others.

Diminished production of raw material will mean lowered standards of living whether prices rise or fall. Prices of finished commodities, consumption goods so-called, risen to an extent out of proportion to the rise in raw materials and perhaps to wages, means that profits are abnormally high.

To attempt an immediate large reduction in prices of finished goods, while prices of raw materials continued to rise, would be dangerous in that it would tend to reduce production. Instead there should be elimination of waste, repression of profiteering and the stimulation of production.

The only safe and practical method of effecting a readjustment now is by the practice of genuine economy, by increased production of the things society needs, by curtailment in the production and consumption of those luxuries which larger money incomes have falsely led us to believe that we could afford.

There must be more information at hand. During the war agencies directed and coördinated productive forces, showing the needs of the nation and encouraging production to meet those needs. One now looks with dismay upon the general flood of misinformation, half complete information, and undiluted ignorance which unavoidably pervades the land regarding our current economic situation in general. Lack of information gives rise to the major portion of industrial uncertainties, hesitation, misunderstanding, and conflict which interfere with the realization of the highest economic welfare of the people. For example, the

failure to produce seventy-five million pairs of footwear which might have been produced during the first three months of 1919, or the reduction of over a hundred million tons in the production of coal up to July, 1919, has meant a national loss of many billions of dollars worth of wealth.

Standard marketing systems should be worked out. The cost of living varies not only between city and city, but between different districts without real reason.

National needs may be estimated. In respect of wage earners' families, for example, the Bureau of Labor Statistics and several other research organizations have made numerous studies of the habitual rate of consumption of families varying in size, income, occupation, and nationality. Unless there is to be reduction in standards of living the lessening of production below what is required to supply normal needs might be avoided by a campaign of education if the right information were available. If, on the other hand, certain improvement in standards of living were desired, the increase in production necessary to meet the requirements of such improvement might be made known and encouraged.

Many of these adjustments must be made by the community at large, not by the individual. The part of the individual is to avoid profiteering of any kind, to study expenditure with care, to practise careful economy, to inform himself as completely as possible of conditions. The Savings Division of the Treasury Department says:

The reaction from the careful use of money during war time is widespread and disturbing. Retailers are securing goods from jobbers without arguing about prices, if they can only be assured of immediate delivery. They know their customers will scramble for the goods, regardless of cost. Thus, with an abnormal demand and a limited output, nothing else can be expected than high prices. It is a natural though deplorable, consequence that profiteers abound.

When spenders are free and easy, prices go up with equal ease. Those who hold their "easy" money too cheaply make hard buying for those who must part sparingly with their limited funds and, by the same token, those who demand luxuries without accounting the cost may expect to pay more for necessities.

The people must return to the policy of careful buying and regular saving if they wish to help the situation.

The quickest way to bring prices down is to stop buying while they are up.

THE SEVEN WEEKS EXPERIMENT BY THE COMMITTEE ON HOUSEHOLD ASSISTANTS¹

A tremendous response by applicants from four paid advertisements in the journals, one hundred and fifty visits to headquarters from employers, many registered applications for the Home Assistant for next fall, unsolicited requests for interviews from half a dozen magazines, universal regrets from employers and assistants at the announcement of the close of headquarters, and the voluntary offer from several employers for financial support of the work—these are the incidents in the seven weeks life of the experimental effort to establish the System of the Eight Hour Day Home Assistant which have justified the venture and proved the need of a permanent organization.

The Committee on Home Assistants came into being through the instigation of the United States Employment Service, as a result of taking an invoice of applicants and employers in January, 1919. It was found that not only in every branch office in New York City placing domestic servants, but that in all such branches throughout the State, there was constantly a shortage of servants as compared to employers amounting to from 200 to 300 per cent. In other words, if there were in one branch office during a certain week 60 calls from housewives, there would be only from 20 to 30 applicants for domestic work.

Those in charge of the Women's Department felt that this was a crucial situation which must be faced at least, dealt with if possible. There was in the late fall and winter a great number of women out of employment—women turned out of munition factories who had, in their work histories, a background of domestic service. However, when they were offered domestic service, they coldly refused it, saying that they had become used to factory hours and would not go back to private homes for a fourteen-hour working day.

It was clear from a study of this situation that housewives must from now on draw for their supply from two groups hitherto untouched for domestic employment—first, the same group now available for store, office, and factory work; second, women having their own homes and families who could work part of the day, but who are not able to conform to the demands of business and industry.

The United States Employment Service, of course, was not the agency to establish such a system with its definite requirements and standards. Therefore, a committee was gathered together whose members repre-

¹ Information furnished by the Committee.

sented some of the important organizations for women in the city, with Mrs. Percy Jackson, representing the Consumers League, the Women's Municipal League, and the Women's City Club, as Chairman. Emma Gunther of Teachers College, and Isabel Ely Lord of Pratt Institute were members of the committee, as well as representatives of the Young Women's Christian Association, the United States Employment Service, and others.

This Committee decided at first to make whatever placements were possible through the United States Employment Service. A meeting of all the women examiners was held and the eight hour system fully explained to them. Each was urged to advertise the idea and to refer any interested girls or employers to one of the offices assigned as the Central Placement Bureau. Many interviews were held with examiners. Some placements were reported. Publicity was successfully accomplished, and a good deal of interest was aroused not only in New York but in other parts of the State. But weeks went by without real accomplishment in getting employer and assistant together.

The Committee members thought at first that one of the best ways to develop practical interest in the work of the eight hour day assistant would be to establish Training Courses in Household Work. This effort was based on the belief that graduates of a school would be placed without question and that well equipped workers would prove the best advertisement of the system. With the cooperation of the Head of the Department of Night Schools of the City Board of Education, a course in household occupations was planned for the Washington Irving High School. The plan was good and the theory of the educational effort was probably sound, but there was one miscalculation. Girls are not organized and are hard to reach. Advertising in such places as Employment Centers and Settlement Clubs proved of no avail. No one registered for the courses. This failure showed the Committee that to attempt to reach the assistant first and then to find employment for her was quite the wrong way about. It became clear that if the employer could be interested—a demand created—the supply would follow and desire for training would come as both employer and employee began to see the value of it.

On the basis of two months experience, the Committee was able to appreciate certain fundamental facts about the problem of establishing the eight hour day system. It became very clear that it was a highly specialized problem; that placement of assistants was impossible in a

big general employment office, because of easy confusion with the placement of hour and day workers; that the personality of the people in charge was particularly important; that a supervisor experienced in the establishment of the eight hour day assistant is absolutely necessary for instruction of employers, for assisting them to plan schedules, and for following up of placements.

Early in March, the United States Employment Service was obliged to retrench because Congress cut its appropriation. Specialized work in the Service became impossible, therefore, and the work of the Committee would necessarily have been dropped except for private financial aid generously offered to carry through the two months experiment.

Shortly after the first of April, headquarters were opened with a paid Executive Secretary, and a member of the committee in special supervision of the work.

The principles embodied in the eight hour day system are regular assistants engaged to be exclusive employees for the housewives (preferably working for no one else at the same time) and engaged to work quite as permanently as do any household employees. They give eight hours a day, six days a week. They eat and sleep at home. They agree to give extra service whenever required, for which they are always to receive extra pay. The wage is determined according to a sliding scale of efficiency and length of time in employment, and does and should compare favorably with that which obtains in factory, shop, and office. These assistants are engaged for regular specific duties, just as resident maids are, but, during the eight hours they hold themselves ready to do whatever the circumstances of the particular day require.

The purpose of the Committee was fourfold: to further in a general way the system itself; to determine what was the available supply of assistants; to determine how great was the demand of the employer; and to make that demand heard by the assistant.

Two weeks of the seven were devoted to printing, advertising, and newspaper and magazine publicity. A folder outlining the fundamental principles of home assistants was distributed among hundreds of employers. Contact was made with more than 150 employers, and all of these were interviewed.

In order to supply one of these employers, an advertisement was put in the New York *Sunday Times* as follows:

"A young business woman may secure three months vacation on coast of Maine if willing to help with the housework, eight hours a day, six

days a week, in exchange for room and board, traveling and incidental expenses paid, and \$5 a week additional. Apply by letter only."

In response to this advertisement there were received some 85 answers. Other advertisements followed, for New York City, for the eight hour home assistant and for the four hour assistant to cover the dinner hour, bringing six and seven responses respectively. Every letter was answered from headquarters, giving an appointment for a personal interview, nearly all applicants met their appointments, and about 50 registered. This number has been increased as a result of publicity to a total of 75.

From the very start the special character of this placement work was demonstrated by the quality of the applicants and the spirit of the employers. Applicants for summer places described themselves as teachers, social workers, business women, statisticians, college girls, buyers. All professed an interest in housework and a desire to make good at it. Employers were, on the whole, responsive and enthusiastic and recognized their responsibility toward the system and its standards. Both in grade of intelligence and in coöperative spirit employers and assistants encountered in this placement work proved superior to the usual personalities who come together in an employment exchange.

The employers might be divided into several classifications:

1. The women from the suburbs who are willing to give up their resident maids and introduce this system as soon as they understand it.

2. The women in New York who have rather large establishments and cannot make the adjustment quickly. They have come for general lectures, have made out schedules covering the particular duties in their homes and have registered for assistants later.

3. The women whose households are without service and who under pressure of necessity rush into headquarters to beg for assistants—this last group were the most numerous.

The groups of applicants might be classified as:

1. The married, trained, and heretofore, resident domestic who seems to be the best adapted at present for the home assistant, principally because of her long years of training.

2. The high school graduate interested to take up this profession instead of going into business.

3. The young business woman who really likes housework and finds she can be a part time home assistant while studying.

4. The married woman who has her own home and understands the problem of household work. One or two of this type have even had their own maids. One or two have grown children and wish to become wage earners.

5. The business women and school teachers who can get the benefit of a change of occupation by becoming home assistants during the summer months at the seashore and in the mountains.

The procedure of handling business at headquarters was as follows: Employers are asked to come to headquarters for an informal talk on the principle of the system and are given an opportunity to present any and all objections or difficulties occurring to them. Schedules are then made out or the supervisor goes to the home and looks over the situation in order to advise how many home assistants the house requires, the five point contract is agreed to, and interviews are arranged with the employee, either at her home or at the office under the direction of the supervisor. After the employee is engaged, the employer is requested to report to headquarters within a few days so that any differences which may have arisen may be adjusted if possible.

The assistant receives the same instruction and the five point contract, and is required likewise to report in case of dissatisfaction, when the matter is handled entirely by headquarters.

Both employers and assistants are individually told that headquarters exists for the permanent establishment of the system, which involves continuous relationship, and both are urged to rely upon it and resort to it for any adjustment necessary. The headquarters, the assistant, and the employer form a triangle in which each side is necessary for the others. A typical illustration of the operation of this principle is in the case of Mrs. W. and her new assistant, Mrs. Van B. A difficulty arose over the question of the employee's dinner which she did not take at the employer's house and when asked to go out for it she refused because she did not wish to interrupt her work. Mrs. W. called headquarters the first day, saying that this situation troubled her. "I feel that it is very inhuman not to give Mrs. Van B. her dinner; I should like to give it to her. But since I have undertaken this system, I propose to live up to it as you request. Won't you explain this to Mrs. Van B., so that she will bring her dinner with her or take time to go out and get it." This matter was easily arranged by an interview between the supervisor and Mrs. Van B. at the latter's house the evening of the same day. The assistant was gratified by the trouble taken and

said, "Understanding your rules I shouldn't dream of taking dinner there. I shall arrange to provide it, as you recommend."

We could tell many interesting instances of the dovetailing of the employer's need and the assistant's possibilities.

Two of the special difficulties which were brought out in our placement experience were: the arranging for the Sunday shift, which many of those who have tried the experiment feel should be a separate one; and the resisting of the pressure to employ home assistants in homes where resident maids are still used.

The five weeks effort proved beyond the shadow of a doubt the reliability and responsibility of the home assistant. The task which lies before us is that of training her and making her efficient. The experiment has accomplished its fourfold purpose. An enormous demand on the part of employers has been established; a new source of applicants has been tapped; public interest has been demonstrated and, most important of all, it has been clearly proved that the eight hour day home assistant is a solution of the domestic problem and capable of adjustment to many different homes, while a definite method of establishing this system has now been satisfactorily worked out.

The headquarters are now closed and the experiment is at an end for lack of funds.

HOME TIES OVER SEAS

Home followed the American army, under the banner of the American Red Cross and other welfare organizations, from the states, across an ocean, and through war-ridden France, even into the land of the Kaiser. So far as was possible reminders of home were so placed that the American soldier, though separated by thousands of miles, would be encouraged to be true to the home, to the cause for which he was fighting, to the trust of loved ones, to himself.

These reminders of home were simple ones—a Red Cross canteen at the front and a girl dealing out cocoa; or again, at a line of communication, women, like the mothers of America, making doughnuts in a Red Cross kitchen where the boys could watch them; perhaps in the city,

the prospect of a rapid return to the front creating an urging inclination to let down, to have a last fling, a Red Cross hotel à la Americaine. And so along the paths where a Yank might wander was the Red Cross with a bit of America to strengthen home-ties, forming moral bonds.

Every possible link to bind the soldier to his home was made by the Red Cross. The wealth of a nation is not judged by its agricultural products alone, its wealth, or its commerce, but is dependent upon the morals of the people, which have as their foundation the home. And through the agencies of the Red Cross, Home was carried overseas and the boys have returned with a deeper appreciation of its sacredness and value.

A PRAYER FOR A LITTLE HOME

God send us a little home,
To come back to, when we roam.

Low walls, and fluted tiles,
Wide windows, a view for miles.

Red firelight and deep chairs,
Small white beds upstairs—

Great talk in little nooks,
Dim colors, rows of books.

One picture on each wall,
Not many things at all.

God send us a little ground,
Tall trees standing round.

Homely flowers in brown sod,
Overhead, thy stars, O God.

God bless, when winds blow,
Our home, and all we know.

*Florence Bone in the London Spectator.
Quoted in Youth's Companion.*

EDITORIAL

The Journal of Home Economics, as it wishes a **Merry Christmas** to its readers, bespeaks their continued coöperation for another year. The JOURNAL desires to bring to its readers even more practical help than it has been able to offer in the past. It desires to keep them informed of events in the home economics world, to make suggestions that can be carried over into the practical work of the home, to offer help for the teacher and the extension worker, both in keeping them informed, giving the results of investigation, and helping formulate methods of work. It can only carry out these plans if all those interested in these problems will contribute of their experience and their knowledge. The JOURNAL acknowledges gratefully the time and thought that many busy women and men are willing to put into book reviews, into news notes, into articles, and it asks that this work may be shared by many more. It is no less true of magazines than of persons that we are most interested in those for whom we work. The JOURNAL wants more subscribers; it hopes that many of its readers will send it as a Christmas gift to friends who would appreciate and enjoy it, but it wants most of all such help as will make it indispensable to teachers of home economics, to extension workers, to women in the home.

Are We Shirking? In the early days of home economics domestic science and domestic service seemed to many people interchangeable terms. Then it was perhaps excusable that an organization like the American Home Economics Association, professing to deal with home problems, should make little attempt to aid in the solution of the problem of domestic employment. Now that home economics has been established in school and college, now that it is generally recognized as worthy of a place in education by the side of science or economics, there seems no fear that any practical work the Association might undertake would lower the standing of the subject.

The domestic service situation has been studied by the Young Women's Christian Association; the United States Employment Service has felt it worth while to conduct an experiment in its adjustment; similar

experiments have been undertaken by individuals in Boston and other cities; the organization of domestic workers has been undertaken by Lady Londonderry in England; similar organization is planned in several places in this country; yet the American Home Economics Association, whose work is distinctly for the home, has not even a committee on household employment. Have we been so concerned with problems of teaching that we have hesitated to deal with this real problem of the home? Would not our teaching be quite as effective if it functioned more directly in the home?

Mrs. Richards many years ago established in Boston a Household Aid Association on much the same lines as the present experiment in New York. Miss Henrietta Roelofs, of the Young Women's Christian Association, in 1915 made a careful study of the question. Should not we, building on these foundations and on the other work that has been done, offer some real contribution to the solution of the question? We cannot excuse our neglect on the ground that such service affects only five per cent of the homes, for, as Miss Roelofs has reminded us, the largest group of women who are employed are either working in homes or in occupations related to it.

If there is to be organization should not we aid in directing it? Is it not time that we helped either to adjust domestic service to the home or else showed the home how to be independent of it?

Proposed Legislation. The Council of the American Home Economics Association at its recent meeting in Chicago endorsed the following two bills that were introduced into Congress at the last session. It will be remembered that the Smoot bill had been previously endorsed.

The so called Barkley bill (H. R. 2855) was introduced into the House by Mr. Barkley of Kentucky, and is to "prevent the misbranding of merchandise." Consumers, honest merchants and manufacturers are suffering from numerous misstatements and fraudulent brands on commodities. Heretofore there has been no adequate protection against it. Under this bill misbranding becomes a crime and punishable by fine, imprisonment, or both. It covers imitations, false or misleading marks on goods, or misrepresentations in advertisements. Misstatements in textiles, foods, leather, and other commodities have been the cause of much wasteful buying by consumers, and even intelligent buyers strenuously object to being thus misled. Several labeling bills have appeared in Congress from time to time, but they have not been

considered workable, for they require too much complex data from the manufacturer and contain within them the possibility of fraud. The present measure is on the order of the British Marks Act which for more than thirty years has worked successfully in Great Britain and her Colonies.

A second bill, called the Tinkham bill (H. R. 7014), asked for the creation of a Bureau of Housing and Living Conditions in the Department of Labor. This Bureau would be charged with investigating the housing and living conditions of the industrial population of the United States. It provides for research and experimentation by the Bureau with a view to the provision and publication of information to make economically practicable the elimination of slums, the improvement of living conditions, the reduction of the cost of construction of dwellings. It is hoped that it also may assist communities in making available to the greatest extent all existing housing facilities, and that it may serve as a clearing house of information on housing and living conditions.

The American Home Economics Association was, by invitation, represented at a hearing on this bill on November 12. A later hearing will probably be given in December or January.

Another bill that deserves attention is the Longworth bill for the protection and development of the dye industry of this country. It provides for a tariff, both ad valorem and specific, on dyes, and for a system of licensing especially applicable to dyes that cannot yet be produced in this country, placing the power of licensing in the hands of the United States Tariff Commission.

THE QUESTION BOX

Question: What causes fresh milk to curdle when boiled with sugar in making fudge candy or icing?

Answer: Chocolate contains an appreciable amount of tartaric acid—from 4.38 per cent to 5.82 per cent.¹ When a fairly large amount of chocolate is used with a given amount of milk, it not infrequently happens that the milk curdles, even though the milk is quite fresh. In order to avoid this either use less chocolate or add to the fudge a small amount of cooking soda, not over $\frac{1}{2}$ of a teaspoonful to 2 ounces of chocolate.

¹ Leffmann and Beam: Select Methods of Food Analysis, p. 277, 1901.

COMMENT AND DISCUSSION

Attention of College Teachers. I am wondering if it is not time that some one called the attention of college teachers to the fact that they sometimes overstep the bounds of courtesy in giving to their students problems which involve the time of instructors in other colleges and universities. For example: I am at present in receipt of a letter asking for information in regard to practice houses. It would take at least an hour to answer the letter as fully as it should be answered. I regret that I have not so much time to give to one student in another institution. I should question whether I were justified in spending so much time upon a single student, perhaps, even in my own institution.

When other instructors ask for information of this kind I have always made it a practice to answer as promptly and fully as possible, for I think that it is necessary to our general growth. I wish there were time to respond to the other demand but it seems to me impossible.

MABEL T. WELLMAN,
Indiana University.

Fat Absorption. I wonder if you would think it worth while to point out the probable cause of the difference in fat absorption in the experiments carried out by Dr. Morgan compared with those of Dr. Blunt. On page 398 of the September JOURNAL, a comparison of the recipes used would indicate a marked difference in the stiffness of the two doughs. We find that this factor is an important one in influencing the amount of fat absorbed.

The report of this work moves me again to strongly emphasize the need of standard weights for the usual household measures. Three tablespoons of egg weighing 11 grams is surprising, unless the egg was well beaten.¹ On the other hand, 148 grams for 1½ cups of flour is excessive.

This term, I hope to carry out with some doughs and batters, similar experiments to those in which potatoes were used as a food to be fried. I was surprised by the fact that the lower temperature was so much more satisfactory for frying the potatoes, both for the product and the effect on the heated fat. The doughs will be a much more severe test, of course, and probably there will be more difficulty in cooking the food properly at a lower temperature.

ELIZABETH SPRAGUE,
University of Kansas.

¹ It was understood by the JOURNAL that this weight referred to the beaten egg.

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NEWS FROM THE FIELD

The Second Annual Meeting of the American Dietetic Association was held in Cincinnati, September 8 to 12, with a large attendance and an unusual number of guests. Lulu Graves, president of the association, responded to the welcome of Mayor Galvin, and was followed by Edna White, president of the American Home Economics Association, who gave a report of the meeting of that Association at Blue Ridge.

Miss Perry, formerly dietitian at Michael Reese Hospital, Chicago, gave a vivid account of her experience in France, contrasting the varied conditions under which it was necessary for dietitians to work, some having modern equipment, others practically nothing. It was necessary for the dietitian to make her own place, since there had been no dietitians in other wars and neither our opponents nor our allies had dietitians. A paper by Katherine Fisher, of Teachers College, on the Courses of Instruction for the Training of Dietitians, read by Miss Wells, of Drexel, showed the need of a good preparatory education, a proper balance between practical and theoretical training, the advantage of practical experience in the home, and of a knowledge of economics. Mabel Garaghty, secretary of the association, in her paper on the training of pupil dietitians, plead for real training instead of the use of the student dietitian to do clerical work or other duties that would not help her when she must assume entire charge of the dietary department.

Whether the dietitian should buy food-stuffs or not was earnestly debated at different sessions with arguments pro and con. Several hospital superintendents were in favor of the plan. One doctor said: "My idea of a dietitian is that she should have complete control of all feeding in the hospital. Next to the chief of staff the dietitian's position is the most important."

Standardization of curricula for nurses' training schools was discussed by Rush Shelow of Norwood, Ohio, and an outline for nurses' training in dietetics was presented. Emma Winalow, Charity Organization Association, New York, spoke of the training of social service dietitians, emphasizing the fact that her work is largely on the preventive side. Mrs. Mary Schapiro, whose paper on Jewish Dietary Problems was published in the February number of the JOURNAL, in her paper on Social Service Dietetics as applied to work with Jewish families, gave a review of the effect of industrial revolution upon the home and women, especially upon untrained women. She showed that, while the dietary laws of the Jewish religion were primarily for the sanitary and hygienic good of the people, when the poor try to live by them an unbalanced ration results. The Jewish social service dietitian is needed to give training in the art of selecting food.

Blanche Joseph explained her social service work in Chicago and her course for student dietitians. Miss Eichelberger of Louisville, Kentucky, described her plan for furnishing a cottage and conducting nutrition classes there, and Miss Buell of Wisconsin University outlined the efforts of the department to get into closer cooperation with the University medical school.

Olive Davis from the Government Hotel at Washington described the problems in the administration of Government dormitories, constituting the largest hotel in the world for women, with a capacity for approximately 2000. Mary Linsley, lately appointed dietitian of this Hotel, described in detail the progressive work in handling the dietitian's problems.

Eleanor Wells, of Teachers College, spoke of the hospital cafeteria, and Miss Arnold of the Y. W. C. A. Board read a paper on cafeteria management. Clara Noyes, head

of the Department of Nursing, American Red Cross, spoke of the work of the Red Cross Chapter Committees in Nursing Activities, and Dr. Louis Bauman of Columbia University gave a paper on dietotherapy. Dr. Elizabeth Campbell of the Cincinnati General Hospital gave a brief talk on the relation of physician and dietitian. Dr. Campbell said that the "devil enters the hospital through the hospital food." "If there is not a dietitian, the staff should demand one." "There should be a field for dietitians to help doctors in their private practice." Dr. William Walsh of the Public Health Service gave an outline of the value of dietitians in public health service, and Dr. J. R. Murlin told "What we have learned in dietetics from the army." Bertha Wood of the Boston Dispensary made it very evident that the dietitian has an indispensable place in the dispensary. Dr. Ernest Irons of Chicago spoke of ways to avoid the excessive waste of food in hospitals, hotels, and households. Mrs. Mary Schwartz Rose of Teachers College read a most effective paper upon child feeding. Many others took part in the discussions that lent additional value to the meeting.

The new officers elected were: President, Lulu Graves, Cornell University; Vice-Presidents, Ruth Wheeler, Goucher College, Baltimore, and Margaret Deaver, Mt. Sinai Hospital, Cleveland; Secretary, E. M. Geraghty, New Haven Hospital; Treasurer, Margaret Sawyer, American Red Cross, Washington, D. C.

The Child Welfare Special. A big gray automobile truck known as the "Child Welfare Special" was put into the field last summer by the Children's Bureau of the U. S. Department of Labor to test the usefulness of the automobile in carrying the message of better babies into rural communities. The truck is completely fitted as a model "well baby clinic" with a Government doctor and nurse in charge to examine children and give mothers advice concerning the care necessary to make and keep them well.

Such advice can be obtained by mothers in towns and cities at children's health centers; but the country woman is usually shut off from such sources of information concerning the proper care of her children. The Children's Bureau car will demonstrate a practical means of bringing education in child care to the doors of mothers who are far from infant welfare stations, and indeed often many miles from doctor or nurse. It is hoped that after a few months in the field a "log" of the car may be put at the service of organizations wishing to operate movable health centers.

The first stop of the car was at Woodson, Morgan County, Illinois. In spite of the fact that the threshing season was at its height, the Government doctor and nurse were almost overwhelmed with the crowd of mothers, fathers, and babies. Examinations lasted until late into the evening.

One mother who through an error lost her turn on the first day, and waited in vain all through the afternoon to have her children examined, returned on the following evening from her home several miles out in the country, so as not to miss the opportunity afforded by the Special. Such is the eagerness of rural mothers to gain help.

The towns visited by the Special have been chosen for the first public showing of the Bureau's motion picture "OUR CHILDREN." This picture shows how the citizens of one small town, Gadsden, Alabama, organized for child welfare and what they did to make Gadsden a safe place for children to grow up in. The stars of the production are Gadsden's population under 6 years of age.

A Remarkable Gathering. Washington that has seen so many conferences during the last few years, has not welcomed a more remarkable gathering than that of the first International Congress of Working Women that met there from October 28 to November 5. Delegates were present from Belgium, France, Czechoslovakia, Japan, and India, as well as from the English-speaking countries. The Women's Trade Union of America acted as hostess. A large

part of the time of the conference was spent in considering a simple legislative program for all nations, dealing with the care of mothers and babies, the protection of childhood, the protection of young womanhood, the question of night work, hazardous occupations, control of unemployment, and the eight-hour day. The resolutions formulated were passed on to the Labor Congress called by the League of Nations in session at the same time in Washington.

While all of these problems have an effect upon the home, the conference put itself upon record for the welfare of the home in a still more direct way, carrying over to the wives of working men the same protection that was offered to those women who were actually themselves employed. The delegates from France and from Czecho Slovakia were especially urgent in this regard. The delegates impressed one as not only thoroughly in earnest, but as wise and reasonable in their attitude toward the questions discussed. Most of them were working women, and the conference included some who have made a national reputation.

The official languages used were French and English, but speeches were made in the language of nearly all the different nations represented. Some, like the Japanese, spoke English well, and every delegation had some member who could interpret into the official languages. Miss Richardson of the Federal Board and Mrs. Norton represented the A. H. E. A. at the conference.

A Health Center. To keep well women well is the purpose of a Health Center recently opened at 43 East 22nd Street, New York City, under the direction of the Social Education department of the Y. W. C. A. There are no fees, and any woman or girl may be examined, advised, and if she wishes, enroll for gymnasium work which will be given with especial thought toward corrective exercises. Dr. Florence Meredith, Director of the Center, has recently made medical examinations at Wellesley College and in a Boston factory where 3,500 women are employed.

After examining these girls Dr. Meredith says, "The main thing that is wrong with both classes of girls is harm done by faulty eating. Girls eat irregularly, too fast, and without proper regard to the rules of diet. Next to faulty eating I have found that a lack of exercise has caused the greatest amount of trouble."

Dr. Augusta Rucker, Director of the Health Division, Bureau of Social Education, plans to establish Health Centers throughout the country, and to use this one in New York as a model where physicians and physical directors from various local associations can come and study the best methods of carrying on similar centers.

The Home Economics Education Conference at Salt Lake City, Utah, July 28 to August 7, was held partly because of the need to get together the Home Project Workers in the twenty districts. These supervisors discussed their individual problems, and were aided by suggestions from one another in the solution of many difficult questions. After a successful summer's work the consensus of opinion among supervisors, mothers, and students seems to be unanimously in favor of the home project.

During the first week of the convention, Miss Isabel Ely Lord gave valuable information and inspiration on methods of teaching household management. Her lectures in the general assembly were on the Aim of Home Economics Education, Surveying the Community before Beginning Home Economics Work, and The Girl and the Vocations.

Dr. Louise Stanley of the Federal Board spoke during the second week of the convention on methods of teaching domestic science and domestic art, emphasizing the teaching of the principle of underlying processes, the use of specific illustrated materials and the wise use of text books and methods of correlation. In the general session she talked on Adapting Home Economics to the Community after the Survey, and The Importance of Related Work.

The Chicago School of Domestic Arts and Science has registered 355 students for its fall term, representing seven different states as well as Manila and Tokio, Japan. A number of the students are college graduates. A new laboratory has been equipped to meet the demand in the lecture and demonstration department that gives instruction in meal planning and preparation, in marketing, in the care and feeding of children, as well as in household management and housewifery. Institutional management and catering are also offered. A request has come for a business men's lecture course on the choice of suitable lunches.

One of the interesting experiments of this school was undertaken at the request of Judge Mary Bartelme of the Juvenile Court of Chicago. A group of sixteen dependent girls from the homes of the court were given courses in cooking, cleaning, and serving, and later the girls were placed in homes. Judge Bartelme felt that the girls had received exceedingly valuable help by this work.

It will be remembered that this school some years ago was awarded the money left from a fund provided for the women's work at the World's Fair in Chicago.

The Eleventh Year of the Harrisonburg, Va., State Normal School opened on September 24 with several changes in the faculty. Samuel Page Duke, A.B., A.M., formerly head of the Department of Education at the State Normal School at Farmville, Va., and for several years Supervisor of High Schools for Virginia, is the new president; Walter J. Gifford, A.M., Ph.D., formerly of Wooster University and also of Goucher College, Baltimore, is the head of the Department of Education; Miss Sarah M. Wilson, M.A., for nine years at Drexel Institute, is Supervisor of Practice Teaching and Instructor in Home Economics; Miss Grace A. McGuire, B.S., Director of Dining Hall, and instructor in Institutional Man-

agement, has just returned from overseas where she served as dietitian for a hospital unit.

This school has gradually raised its requirements for entrance, and this year offers four years of college work with one preparatory year. The degree of B.S. was first awarded last June to a class numbering eleven. The Department of Home Economics is arranged to meet the requirements of the Smith-Hughes Act; this is the only Normal School in the State empowered to issue degrees under this Act.

Notes. Miss Gertrude McCheyne, who has been for a number of years the successful leader of extension work in Utah, has resigned from her position in the Utah State Agricultural College at Logan, and accepted the position of State Leader for Home Demonstration Work in the state of Kentucky.

Miss Florence Harrison, who for six years was Associate in Home Economics and Supervisor of Teacher Training at the University of Illinois has been made Dean of the College of Home Economics at the State College at Pullman, Wash.

Miss Elizabeth Beyer, formerly of the College of Industrial Arts of Denton, Texas, has been appointed to fill the vacancy at the University of Illinois.

The honorary degree of Doctor of Laws was conferred on Sophonisba Preston Breckinridge, Assistant Professor of Social Economy in the University of Chicago, at the commencement of Oberlin College. Miss Breckinridge already holds the degrees of Doctor of Philosophy and Doctor of Law (J.D.) from the University of Chicago.

Dr. Nellie E. Goldthwaite, who returned last summer from the Orient, is to be Assistant Professor of Home Economics in the State Agricultural College, Fort Collins, Colo.

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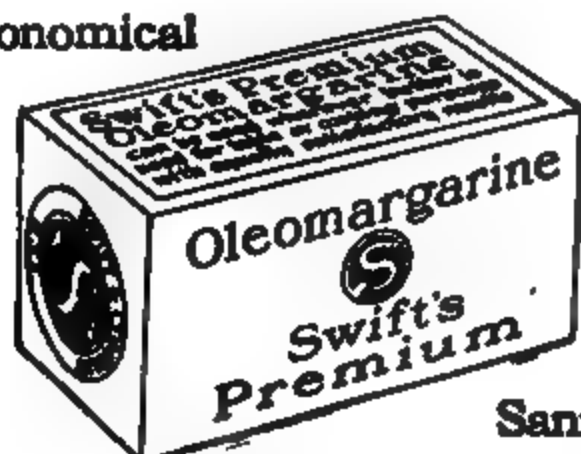
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Cocoanut Snowballs

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| 4 cups powdered sugar | 1 cup Dromedary Cocoanut |
| 1 egg-white beaten | 1 teaspoon vanilla extract |
| 4 tablespoons water | $\frac{1}{2}$ teaspoon lemon extract |

Mix sugar, white of egg beaten to a stiff froth, and water, then add Dromedary Cocoanut, vanilla and lemon extracts. Beat until stiff, then mold into small balls. Lay on waxed paper and set in a cool place to harden. Serve, if desired, in bon-bon cases. Cocoanut fudge and penuche are also delicious.

Cocoanut and Chocolate Cream Rocks

| | |
|--|--|
| 1 pound sugar | 1 cup Dromedary Cocoanut |
| $\frac{1}{2}$ cupful water | Few drops vanilla extract |
| $\frac{1}{2}$ teaspoon cream of tartar | 2 squares unsweetened chocolate melted |

Boil sugar, water, and cream of tartar three minutes after actual boiling commences, remove from fire and stir until the sirup becomes cloudy, then add Dromedary Cocoanut. Flavor one-half of mixture with extract, and flavor second half with chocolate. Drop from a spoon in rocky cakes on waxed paper.

Home Made Candies—Ideal Christmas Gifts

Cocoanut Candies are now so made successfully.

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HOME-MADE CANDIES

A Christmas Suggestion by MRS. KNOX

For Christmas, I suggest home-made candies, and give below recipes that are easy and economical to make with home materials. These candies will please the family—grown-ups as well as children—for they are pure, wholesome, delicious sweets, and so attractive that they are particularly suitable for gift-giving.

KNOX

SPARKLING GELATINE

FRENCH DAINTIES (CANDY)

Soak 2 envelopes Knox Sparkling Gelatine in one cup cold water five minutes. Add 1½ cups boiling water. When dissolved add 4 cups granulated sugar and boil slowly for fifteen minutes. Divide into two equal parts. When somewhat cooled add to one part one teaspoonful extract of cinnamon. To the other part add one-half teaspoonful extract of cloves, and color with the coloring tablet found in package. Pour into shallow tin that have been dipped in cold water. Let stand over night; turn out and cut into squares. Roll in fine granulated or powdered sugar and let stand to crystallize. Vary by using different flavors, such as lemon, orange, peppermint, wintergreen, etc., and different colors, and adding chopped nuts, dates or figs.

Sugar Saving Suggestion: Syrup may be used in these candy recipes by replacing each cupful of sugar with three-fourths of a cupful of syrup.

COCOANUT MARSHMALLOWS

Soak 1 envelope Knox Sparkling Gelatine in ½ cupful of water five minutes. Put 2 cups granulated sugar and ½ cup water in saucepan, bring to the boiling point and let boil until syrup will spin a thread when dropped from tip of spoon. Add soaked gelatine and let stand until partially cooled; then add few grains salt and 1 teaspoonful vanilla. Beat until mixture becomes white and thick. Pour into granite pans, thickly dusted with powdered sugar, having mixture one inch in depth. Sprinkle with grated cocoanut. Let stand in a cool place until thoroughly chilled. Turn on a board, cut in cubes and roll in powdered sugar. This recipe makes about one hundred marshmallows. Nuts, chocolate, fruit juices in place of part of the water, or candied fruits chopped may be added. Dates stuffed with this confection are delicious.

ANGEL CHARLOTTE DESSERT

This dainty dessert will add a happy ending to any Christmas dinner

1 envelope Knox Sparkling Gelatine
1 dozen rolled stale macaroons
1 dozen marshmallows, cut in small pieces
2 tablespoonfuls chopped candied cherries
1 lb. blanched and chopped almonds 1 cup sugar
1 pint heavy cream 1 teaspoonful vanilla
1 cup cold water ½ cup boiling water
Soak the gelatine in cold water, dissolve in boiling water, and add sugar. When mixture is cold, add cream, beaten until stiff, almonds, macaroons, marsh-

mallows and candied cherries. Flavor with vanilla. Turn into a mold, first dipped in cold water, and chill. Remove from mold and serve with angel cake.

This dessert may be made more elaborate by cutting the top from an angel cake or stale sponge cake, and removing some of the inside, leaving a case with three-fourths inch walls, then filling case with mixture, replacing top of cake, covering with frosting, and garnishing with candied cherries and blanched almonds.

Quantity with Quality in KNOX, "the 4-to-1" Gelatine, for each package makes FOUR PINTS of Jelly—four times more than the ready-prepared brands.

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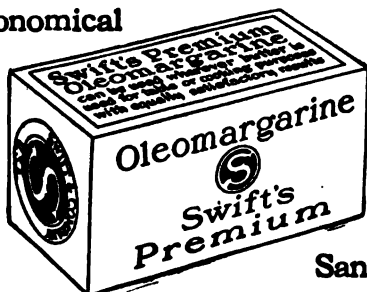
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Chocolate Coconut Fudge
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on the can).

2 cupfuls brown sugar*

4 or 5 tablespoonfuls grated choco-
late or cocoa added to sugar.

$\frac{1}{2}$ cupful Coconut milk.

Butter, size of walnut.

Double quantities for full portion.

Put sugar, chocolate and milk in
saucepan, boil 12 or 15 minutes,
stirring constantly. Before re-
moving from fire, add Coconut
and butter and beat until cool.
Pour in buttered tin and cut into
squares before it hardens.

For Plain Fudge omit chocolate.

For Seafoam boil 10 minutes
only, stirring in well-beaten egg
whites as it cools.

*Granulated sugar may be used.

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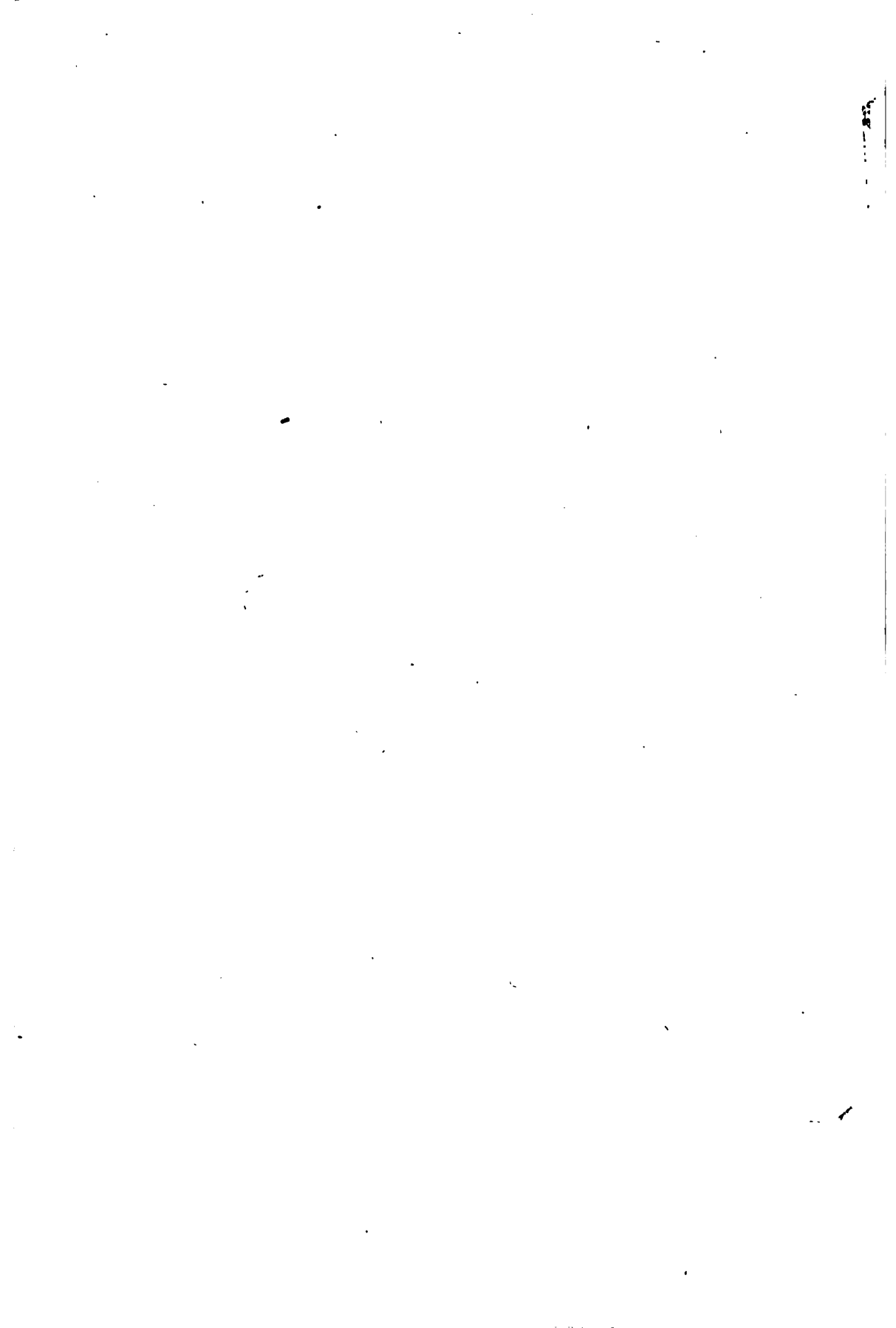
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